A STUDY OF THE READING ABILITIES OF SEVENTH GRADE CHILDREN

by

ETHEL JAMISON

A.B. McPherson College

McPherson, Kansas, 1931

Submitted to the Department of Education and the Faculty of the Graduate School of the University of Kansas in partial fulfillment of the requirements for the degree of Master of Arts.

Approved by:

Bert A Nash
Instructor in Charge

Raymond A. Schweiker
Head of the Department

July, 1932.

ACKNOWLEDGMENTS

The writer wishes to express sincere appreciation to Dr. B.A. Nash for his kind advice and constructive criticism in the direction of this study.

Acknowledgment is also made to Mr. M.F. Hyde, Principal of the Lawrence, Kansas, Junior High School, for his cooperation in administering the tests and for his permission to use office records.

E.J.

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CHAPTER I

INTRODUCTION

In times past when reading materials for the masses were neither available nor necessary, man was not greatly handicapped in competing with his neighbors because of his inability to gain knowledge from written records. Due to the limited contacts with life, the demands of society for a high degree of efficiency in reading were few. The very simplicity of life made the art of reading practically unnecessary.

"Today reading is essential to intelligent participation in the activities of modern life and it is vitally related to practically all classroom activities."[1]

With the enlargement and growth of communities from small isolated units with very narrow interests into larger units with world interests, has come a call for increasingly greater means of keeping in touch with the affairs and activities of the world. The ability to read accurately and rapidly the different types of reading materials is one of the greatest accomplishments of man so far as personal enjoyment and general enlightenment are concerned.

As modern life becomes more complex, the obligations and responsibilities of the school become more numerous. Efficient teachers everywhere are setting up objectives and broadening the aims of teaching reading in order that they may be able to prepare pupils to

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1. Twenty-Fourth Yearbook of the National Society for the Study of Education, Part I, (1925) p. 9.

enter into and secure the most personal gain from school subjects and life activities that involve reading. Reading should not be taught for its own sake, but as a means to an end. Teachers who are interested in scientific procedures for the teaching of reading are taking advantage of the results of psychological research of the last few years, with a hope of making more efficient readers and hence, better citizens.

Reading a Complex Act

There is back of every mechanical phase of reading a complex psychological process in operation. This psychological process is composed of intricate habits integrated into a reaction known as reading. Most pupils reach the seventh grade with a number of reading habits partially developed. The use of these habits varies with the content and purpose of reading.[1] The degree to which distinct reading habits have been perfected will depend not only upon the amount and variety of reading experience, but also upon the guidance and incentives provided to induce proper reading habits.

Gates says, "that while training in the primary grades is of supreme importance, instruction in reading does not cease with the primary grades and difficulties in teadhing are not confined to the lower levels."[2] There is no limit to the degree to which one can develop his skill in reading. Since reading is the most essential

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1. S.C. Garrison and K.C. Garrison, The Psychology of Elementary School Subjects. Johnson Publishing Co., New York, 1926, p. 272.
2. A.I. Gates, The Improvement of Reading, (1929) p. 3.

tool subject, a tool upon which all educational progress depends, it seems highly important that every teacher should be a reading teacher. Every teacher should have some knowledge of the fundamental laws that form the basis for further development of psychological habits related to the reading process. A point of departure has been established if one can discover the particular type of reading which is most valuable to his field of instruction. Techniques and methods of study can be more adequately provided if such knowledge is at one's disposal. It was with such facts in mind that this study was made.

B. Related Studies

Evidence that those engaged in research are recognizing the importance of reading in education is made manifest by the great number of investigations that have been carried on in that field in recent years.

According to W.S. Gray, studies made within the last five years disclose the fact that pupils who enter junior high schools vary widely in reading achievement. He states that scores on reading tests usually range from the third-grade norm or below to the twelfth-grade norm or above. There are two general types of reading deficiencies recognized among secondary school pupils. One of them relates to difficulties in fundamental habits of recognition and interpretation, the other relates to difficulties in various forms and applications in content subjects.[1]

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1. W.S. Gray, "Reading Deficiencies in Secondary Schools" The Journal of National Educational Association, June 1931, p. 197.

J.M. McCallister carried on an investigation in the seventh and eighth grades of the Laboratory Schools of the University of Chicago in 1926-27 and 1927-28 to discover reading difficulties encountered in studying content subjects. He made a careful analysis of reading activities involved in the study of American History, mathematics, and general science. This information was obtained through (1) visiting classes to learn the methods of teaching and materials taught, (2) careful study of the techniques of teaching and of materials taught to determine the reading activities required, and (3) analysis of pupils' written reports and observation of pupils' study activities to identify difficulties in performing reading activities.[1]

The results of this study show (1) twenty-one reading difficulties growing out of pupils method of attack, (2) thirteen reading difficulties caused by inability to recognize relationship, (3) six difficulties arising from lack of knowledge of subject matter, (4) five reading difficulties caused by deficiencies in vocabulary, (5) three reading difficulties caused by inaccuracies, and (6) two difficulties caused from lack of clearness in directions given to pupils.[2]

The same investigator made another study to determine the cause and character of retardation in reading among pupils of the

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1. J.M. McCallister, "Reading Difficulties in Studying Content Subjects." Elementary School Journal. Nov. 1930, p. 191.
2. Ibid., p. 199.

seventh and eighth grades. After giving several standardized reading tests, he selected for further study those whose scores were below the norms for their respective grades on one or more tests. The case study technique was then used. A critical analysis of the reading difficulties of each pupil was made through the use of formal and informal tests, photographs of eye-movements, and observation of study procedures. To determine the cause and origin of deficiencies, a study of contributing influences, such as mental ability, school history, and personality traits, was carried on.[1]

Among the significant causes of reading deficiencies disclosed by this study, meager reading experience was found to be the most common cause. Other factors contributing to reading difficulties were personality traits, such as dreamy meditative disposition, nervous and excitable temperament, extreme timidity, impetuous disposition, indifference, meager reading vocabulary, frequent changes of schools, advancement at too rapid a rate in lower grades, slow learning resulting from low mentality, narrow interests, defective vision, and improper reading habits.[2]

Reading and Scholastic Achievement

Dickinson, in an effort to determine the relation of reading ability to scholastic achievement correlated school marks with test

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1. J.M. McCallister, "Character and Causes of Retardation in Reading Among Pupils of the Seventh and Eighth Grades." Elementary School Journal, Sept. 1930, p. 36.
2. Ibid., p. 42.

scores. The following tests were given to a group of pupils in Grade IXB: the Pressey Mental Survey Scale, the Thorndike McCall Silent Reading Scale for Understanding of Sentences, and the Thorndike Visual Vocabulary Scale Alpha 2 X series. The marks representing achievement were obtained from school records of the pupils in the eighth, ninth, and tenth grades.

The following conclusions were drawn from findings of the study: (1) The correlation (.649 ± .032) between the scores made on the intelligence test and the scores made on the silent reading test suggest a pertinent relation between the two; (2) the coefficient of correlation between the scores on the vocabulary and the intelligence tests (.631 ± .031) further emphasizes the foregoing statement; (3) the highest coefficient of correlation (.763 ± .026) was between scores made on the silent reading test and those made on the vocabulary tests; (4) coefficients of correlation between reading scores and the different school subjects ranging from .233 to .743 prove that there is a close relation between reading ability and scholastic achievement; (5) those factors and elements that underlie efficient reading and vocabulary ability are significant factors conditioning school progress.[1]

Among noted research workers in the field of reading are Judd and Buswell, who through an extended study of the various types of reading, have concluded that excellent performance in one type of

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1. Charles E. Dickinson, "A Study of the Relation of Reading Ability to Scholastic Achievement." School Review. Oct. 1925, p. 617-626.

reading does not imply excellency in all other types. Their results justify their statement concerning the necessity of a special technique for teaching high-school students to read algebra fluently and intelligently, and that there ought to be teaching methods for instruction in reading science and other school subjects. They state further that the higher applications of reading ability are not to be ignored or thought of as automatically provided for by the training given through the reading of fiction or poetry.[1]

An analytical study of thirty-one disability cases in reading made by Myrtle Keplinger substantiates the findings of other investigators. For this study thirty-one poor readers were selected on the basis of test scores received on Gates Silent Reading Test and the New Stanford Achievement Test in Reading. These tests were given to the entire seventh grade in the Lawrence Junior High School. A detailed study was made of those ranking lowest. The writer wished to discover the mental ability of the group and to detect their specific reading difficulties. The environment was studied to see the effect of certain personality characteristics upon reading abilities.

The following tests were administered (1) Terman's Test of Mental Ability, (2) Otis Self-Administering Intelligence Test, (4) Porteus Maze Test, (5) Stanford Revision of the Binet-Simon Intelligence Test, (6) Gates Primary Reading Test, (7) Public School

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1. C.H. Judd and G.T. Buswell, "Silent Reading: A Study of Various Types." Supplementary Educational Monographs. No. 23. Nov. 1922, p. 26.

Achievement Test in Reading Form I, (8) Gray's Standardized Oral Reading Paragraphs, (9) Informal Speed tests, (10) New Stanford Achievement Test.

Correlations were made using the different test scores. Questionnaires were used to secure further information concerning the environment of those studied. From these data, Miss Keplinger concluded (1) that mental ability was closely related to scholastic achievement, (2) that the class did better in mechanical processes than they did in abstract thinking, (3) that poor home environment and little encouragement to read caused retardation, (4) that frequent changing of schools caused retardation and difficulties in reading, (5) that the children were not handicapped physically, (6) that personality traits such as indifference, lack of self-confidence, lack of dependability, lack of perseverence, and lack of originality may have caused some failures.[1]

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1. Myrtle Keplinger, An Analytical Study of Thirty-One Disability Cases in Reading. Unpublished Master's Thesis. 1930.

CHAPTER II

STATEMENT OF THE PROBLEM AND THE METHOD OF PROCEDURE

The aim of this study is to attempt to answer the following questions, through the use of standardized test results, personal interviews, and school records.

1. What is the relation between reading ability, as measured by standardized tests, and chronological age, mental age, intelligence quotients, different school subjects, and the average of seventh grade marks?

2. What types of reading as measured by Gates Silent Reading Test are most essential to achievement in the different school subjects?

3. What relationship exists between oral reading, as measured by Gray's Oral Reading Paragraphs, and silent reading ability as measured by Gates Silent Reading Test, The New Stanford Reading Test, and the Chapman-Cook Speed of Reading Test?

4. What relationship exists between the following factors and reading ability?

   a. Occupation of father

   b. Number of magazines in the home

   c. Sunday-School attendance

   d. Kind of reading preferred

   e. Attendance of movies

   f. Attitude toward reading

g. Radio in the home

h. Change of schools

i. Travel

5. Are there any significant differences in the reading abilities of the six elementary school groups?

6. What is the approximate reading proficiency of the seventh grade as revealed by a battery of tests?

To answer these questions correlations were made between reading scores and chronological ages, mental ages, intelligence quotients and school marks. High and Low Groups were selected on three different bases, and comparisons were made by the use of the formula $\frac{D}{P.E._{(diff.)}}$, the reliability of the difference between two obtained means. For the purpose of detecting factors which influence reading ability, the personal interview technique was employed with two of these groups. For additional comparative study, the groups representing the different elementary schools were compared on various measures.

The official school records were used in securing chronological ages, mental ages, intelligence quotients, school marks, New Stanford Reading Test scores, and elementary school records.

Limitations of the Problem

Some of the most obvious of the limitations of this study are as follows:

1. Grades may not be an adequate measure of achievement. Motivation is essential to school progress, but it is not measured by standardized

tests, nor by school marks.

2. Emotional stability has not been considered in this study. A child's attitude, feelings, and emotional control are of paramount importance in education, but this study has not emphasized them.

3. Standardized tests are useful in detecting group weaknesses, but individual study is needed to disclose specific difficulties of special deficiencies.

4. This study has not included an investigation of physical deficiencies which might cause reading difficulties.

CHAPTER III

PRESENTATION OF DATA

A. Data on Mental Tests

Near the close of each school year those in charge of the Lawrence, Kansas, Junior High School provide a mental testing program for pupils in the elementary schools who will be eligible to enter the seventh grade the following September. In May, 1931, five mental tests were given.

The Tests given were:

1. Terman Group Test of Mental Ability, Examination Form B.
2. Haggerty Intelligence Examination, Delta II.
3. McCall Multimental Scale.
4. National Intelligence Test, Scale A, Form I.
5. Otis Self-Administering Tests of Mental Ability, Intermediate Examination, Form B.

The results of each of these tests were changed into Terman equivalents, and median intelligence quotients were calculated and corrected to date of other tests. During the next year, those who entered the school system from other schools were tested, and their records were placed on file with those from the Lawrence schools.

The first column of Table I shows the distribution of chronological ages. The mean chronological age of 13 2/12 years is probably about the average age of most seventh grade pupils in

TABLE I

CHRONOLOGICAL AND MENTAL AGES

Months	Chronological Age F	Mental Age F
205-209		2
200-204	1	4
195-199	0	5
190-194	0	8
185-189	2	8
180-184	6	12
175-179	5	6
170-174	14	23
165-169	17	27
160-164	23	20
155-159	39	26
150-154	42	26
145-149	36	11
140-144	10	13
135-139	8	7
130-134		3
125-129		2
No. of Cases	203	203
Mean	157.35 (13 2/12 yrs)	164.52 (13 9/12 yrs.)
S.D.	11.12 months	18.65 months

school systems where pupils start to school at about six and one-half years of age. The dispersion at the upper end of the distribution is much greater than that at the lower end, indicating that there were more extreme cases among the older pupils than among the younger ones.

The second column of Table I shows the arrangement of the group according to mental ages. Although the mean mental age is seven months greater than the mean chronological age, it should be noted that the standard deviation is larger also. The middle sixty-eight percent in this distribution fall within the approximate limits of twelve to fifteen years, while in the chronological ages the limits included only those cases between twelve to fourteen years. Thus it is evident that there is a somewhat greater scatter around the central tendency in the distribution of mental ages.

As one would expect from a study of the distributions of chronological and mental ages of the group, the mean I.Q. is above 100. Table II presents the arrangement of the seventh grade on the basis of I.Q. The extreme measures of 70 and 145 show a great range of capacity. Considering an I.Q. of 100 as representing average intelligence, this group with a mean I.Q. of 106 is slightly above average mentally. The standard deviation of 15.50 marks the limits of the middle sixty-eight percent between 90 and 122, approximately.

TABLE II

INTELLIGENCE QUOTIENTS (TERMAN GROUP TESTS)

I.Q.	F
145-149	1
140-144	0
135-139	5
130-134	9
125-129	12
120-124	11
115-119	18
110-114	18
105-109	28
100-104	26
95-99	32
90-94	12
85-89	13
80-84	11
75-79	4
70-74	3
Total Number of Cases	203
Mean I.Q.	106.02
S.D.	15.55

The amount of dispersion is greater toward the upper end of the distribution.

In this study of the results of the mental test data, the following facts are evident:

1. The mean chronological age of the group is approximately the same as the average of other seventh grade pupils.

2. The mean mental age of the group is higher than the mean chronological age. These facts insure a mean I.Q. above average.

3. The great range in mental capacity presupposes differences on all measures of achievement.

B. Distribution of Raw Scores of Reading Tests

The following standardized reading tests were given to the entire seventh grade: Gates Silent Reading Test, The New Stanford Reading Test, and Chapman-Cook Speed of Reading Test.

Gates Silent Reading Test is composed of four types of tests. Gates says that there are four types of reading abilities, that an individual may be competent in one type and not in others, and that each type is developed by instruction directed specifically to it. Because of these facts he has divided the test into four parts to test distinct types of reading.[1]

Gates Type A - Reading for General Significance.

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1. Gates, A.I., The Improvement of Reading (1929) pp. 180-181.

TABLE III

SCORES ON GATES SILENT READING TEST

TYPES A, B, and C

Scores	Type A F	Type B F	Type C F
24-	7	13	3
22-23	7	9	11
20-21	15	21	24
18-19	18	21	20
16-17	19	23	38
14-15	35	31	27
12-13	35	33	28
10-11	32	20	24
8-9	22	19	18
6-7	11	6	8
4-5	2	5	0
2-3		2	2
Total Number of Cases	203	203	203
Mean	14.45	15.37	15.34
S.D.	4.62	5.12	4.58
Mean Reading Grade	6.73	7.18	7.68

Table III presents the distributions of scores on Tests A, B, and C. The first column of this table gives the results of Type A, Reading for General Significance. The mean score of 14.45, equivalent to a reading grade of 6.73, indicates below average performance on this type of reading. The standard deviation, 4.62 suggests a rather close grouping around the central tendency.

Figure I presents the same facts graphically. It shows also the performance of the group in relation to established norms for other grades. In this graph, and others to follow, the red line will represent the average mark of the group being studied. This graph shows somewhat greater dispersion near the upper limits.

Type B - Reading to Predict the Outcome of Given Events

In the second column of Table III, the results of Type B, Reading to Predict the Outcome of Given Events, are given. The mean and standard deviation are larger than in Type A. It is interesting to note that thirteen pupils made perfect scores, scores above eleventh grade achievement, while only two made scores of the third grade level.

Figure II, with its extended base line indicates considerable dispersion. Although the mean reading grade is 7.18, the performance is still below average as these tests were given at the beginning of the eighth month of the seventh year.

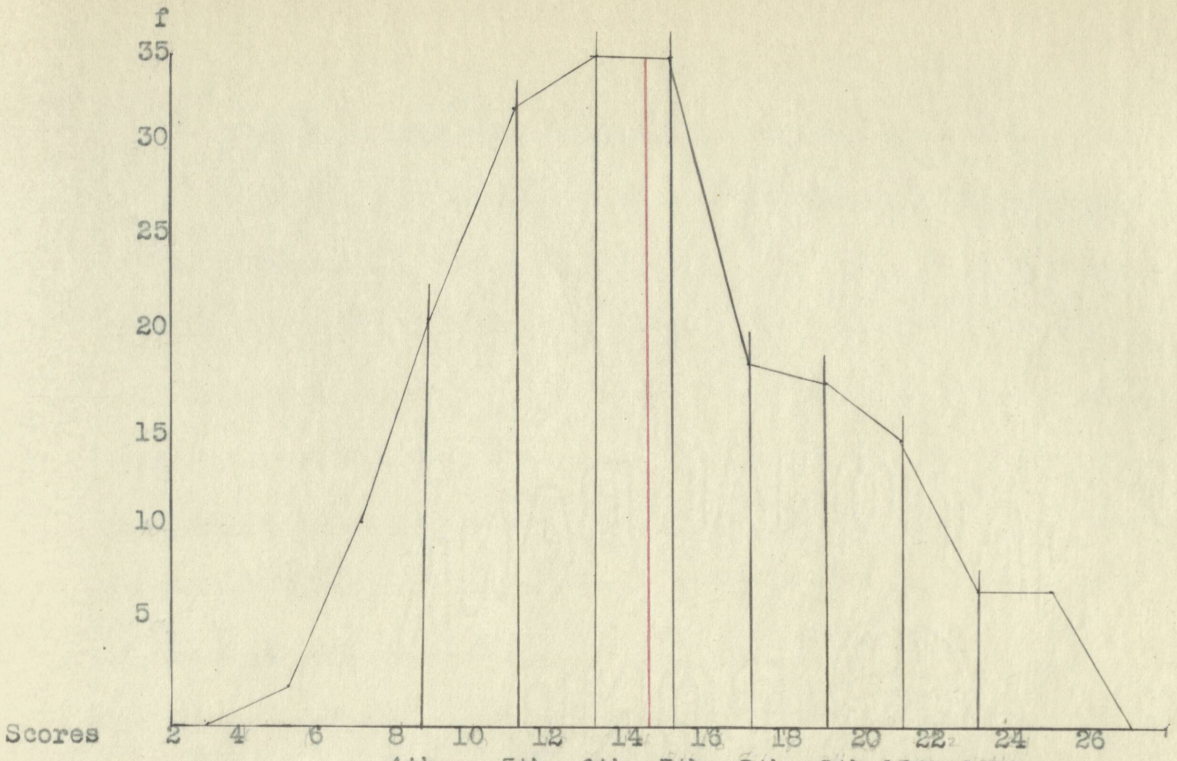

Figure I. Showing ths Distribution of Scores on Gates

Type A of 203 Seventh Grade Pupils

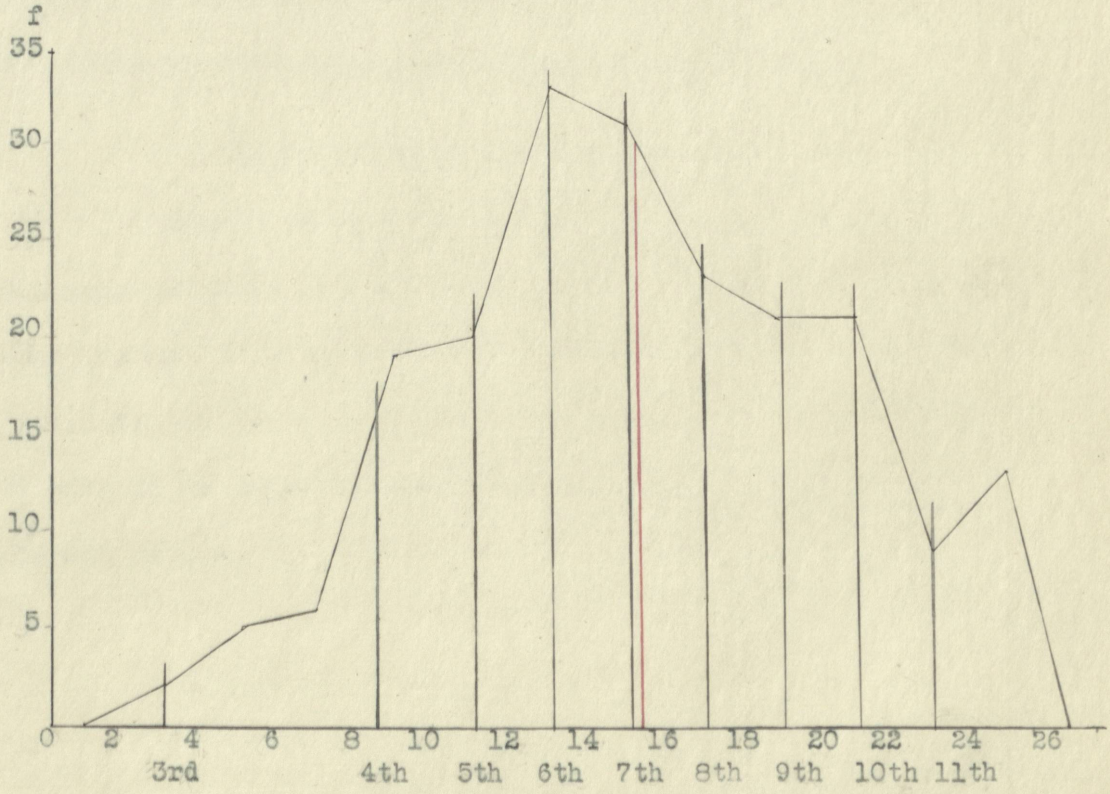

Figure II Showing Distribution of Scores on Gates

Type B of 203 Seventh Grade Pupils

Type C - Reading to Understand Precise Directions.

The third column of Table III presents the arrangement of the group on Type C, Reading to Understand Precise Directions. In this test, the mean score of 15.34 with a standard deviation of 4.58 is indicative of a rather close grouping around a mean score equal to a reading grade level of 7.68. There is more scatter at the lower end of the distribution than is found at the upper end. Figure III shows that there is more tapering off toward the upper end of the distribution, but the two extreme cases at the lower end cause the major portion of the base-line to lie below the group mean. The red line falls nearer the eighth grade mark than it did in the other types, and the standard deviation is smaller; but the attainment of the group in this type of reading is still a little below average for pupils who have almost completed the seventh grade.

Type D - Reading to Note Details

Table IV deals with Type D - Reading to Note Details. The mean score of 35.73 and its corresponding mean reading grade indicate lower average performance on this test than on any other of the four types. The standard deviation of 9.42 locates the middle sixty-eight per cent of the cases between 26.31 and 45.15, a range of about nineteen points.

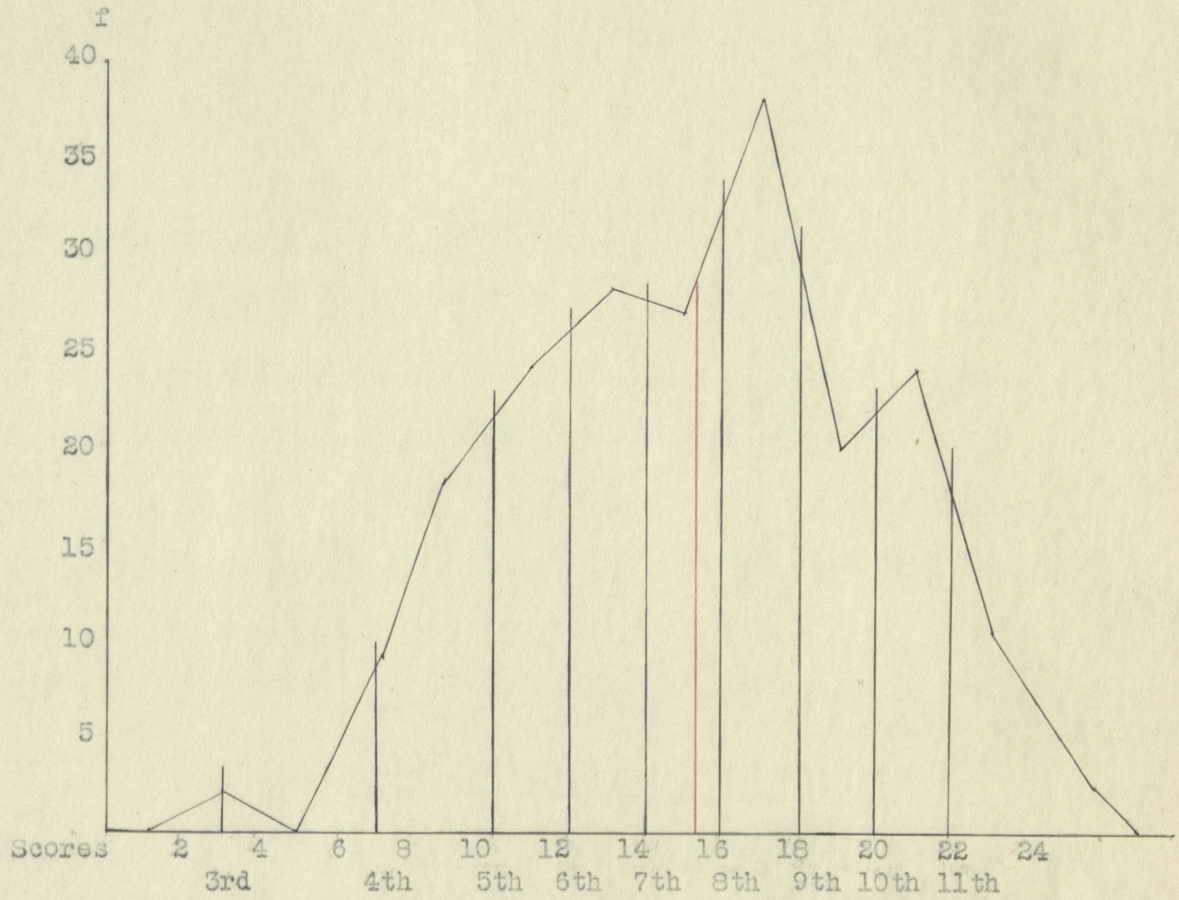

Figure III. Showing Distribution of Scores on Gates Type C of 203 Seventh Grade Pupils

TABLE IV

SCORES ON GATES SILENT READING TEST - TYPE D

Scores	F
54	4
51-53	3
48-50	15
45-47	18
42-44	14
39-41	21
36-38	29
33-35	20
30-32	23
27-29	12
24-26	20
21-23	11
18-20	8
15-17	3
12-14	2
Total Number of Cases	203
Mean	35.73
S.D.	9.42
Mean Reading Grade	6.48

Figure IV shows some piling up of scores toward the upper end of the figure. The group mean falls between the sixth and seventh grade levels of achievement. It should be a little more than a grade higher to reach the average grade standing of similar groups.

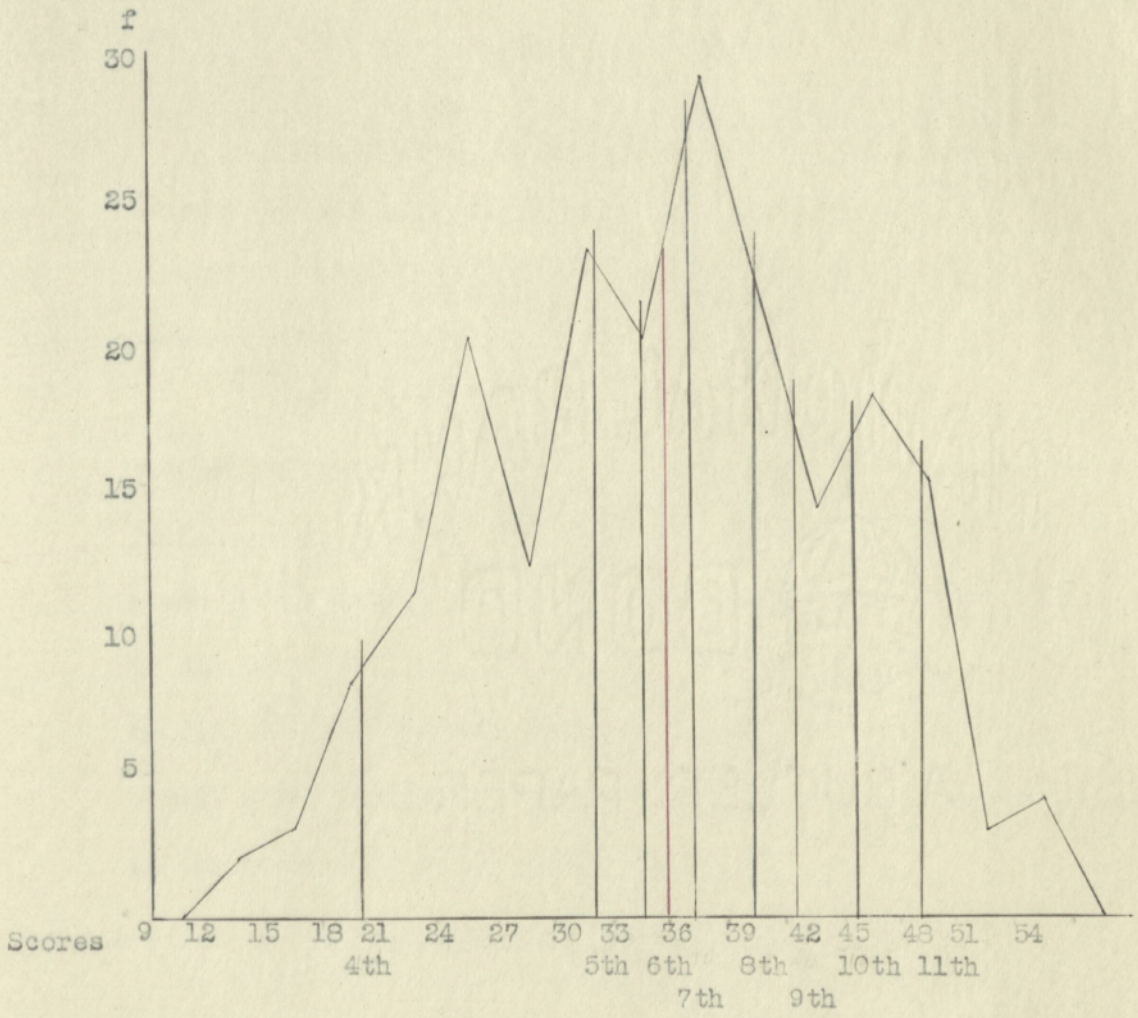

Figure IV. Showing Distribution of Scores on Gates Type D of 203 Seventh Grade Pupils

New Stanford Reading Test

The New Stanford Reading Test was designed to measure two phases of reading ability, word meaning and paragraph meaning. Norms are available for the different levels of performance.

The first column of Table V shows the distribution of scores, the mean, and the standard deviation of Test I, Paragraph Meaning. On this test the seventh grade pupils made a mean score of 92.23, which is equivalent to the mean reading grade of 8.43. On this measure of reading the group scored almost a whole grade beyond their actual grade placement. There is a large amount of scatter in the lower part of the distribution.

TABLE V

SCORES ON THE NEW STANFORD READING TEST

Scores	Paragraph Meaning F	Word Meaning F
120-124	2	
115-119	3	
110-114	13	3
105-109	24	20
100-104	28	22
95-99	33	19
90-94	20	21
85-89	21	22
80-84	20	25
75-79	12	17
70-74	11	21
65-69	4	11
60-64	4	12
55-59	4	5
50-54	1	1
45-49	2	3
40-44	0	1
35-39	0	
30-34	1	
Total Number of Cases	203	203
Mean	92.23	85.63
S.D.	15.35	15.40
Reading Grade	8.43	7.47

Figure V shows the piling up of high scores, resulting in a high degree of negative skewness.

In the second column of Table V the scores on the Word Meaning Test are given. The mean score of 85.63 equals a reading grade of 7.47, which is a manifestation of slight deficiency in vocabulary. Figure VI shows a distribution that approaches the normal curve more nearly than does the arrangement of scores on Test I. The scatter is a little greater at the lower end of the distribution than in the upper portion. The standard deviation, 15.40, locates the limits of the middle sixty-eight percent between 70.23 and 101.03, a range of thirty-one points.

The Chapman-Cook Speed of Reading Test

The Chapman-Cook Speed of Reading Test consists of thirty short paragraphs, each of which contains one word which spoils the meaning of the paragraph. The pupils are instructed to cross out the misused words in the series of paragraphs.

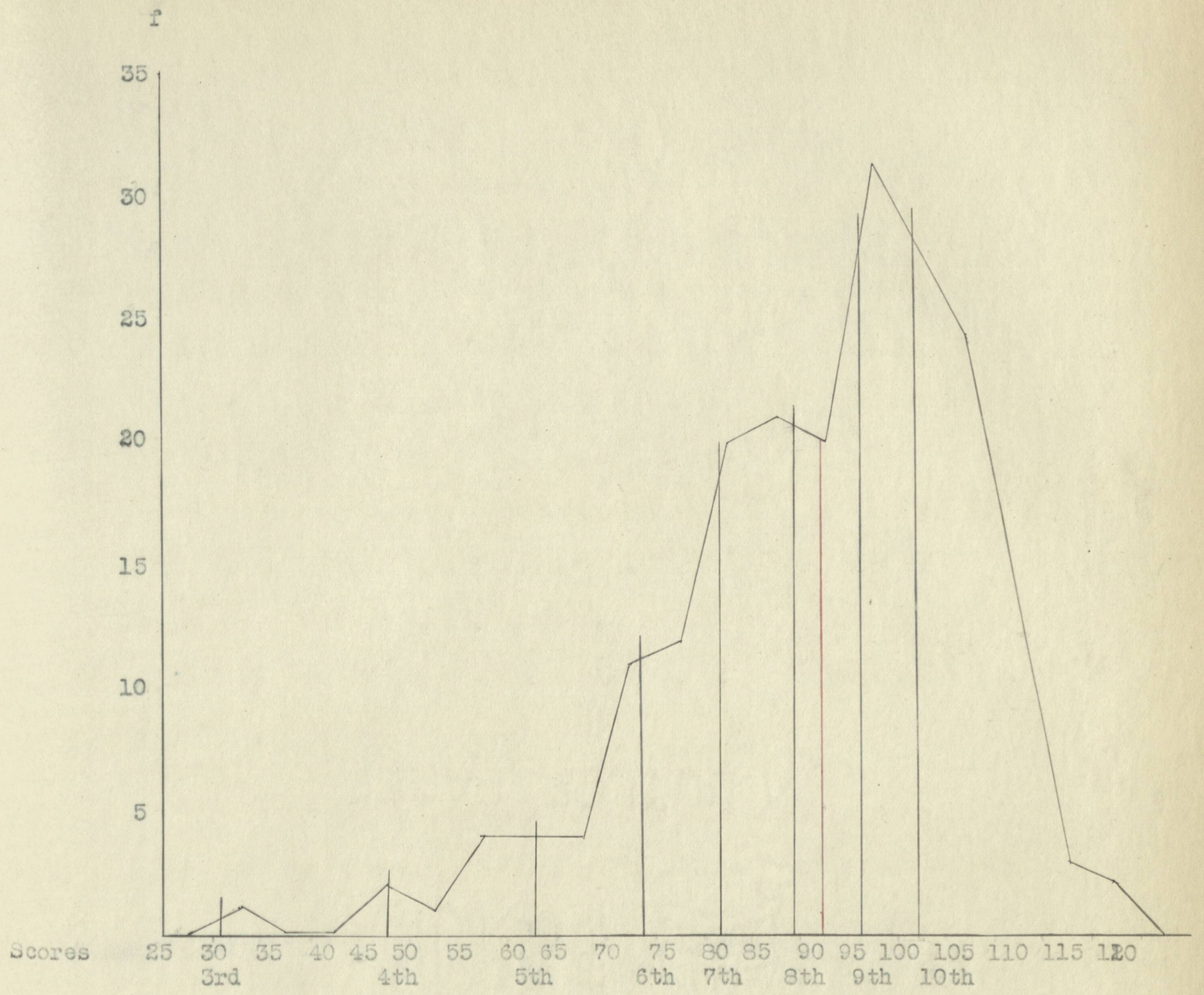

Figure V. Showing Distribution of Scores on the Stanford Paragraph Meaning Test of 203 Seventh Grade Pupils.

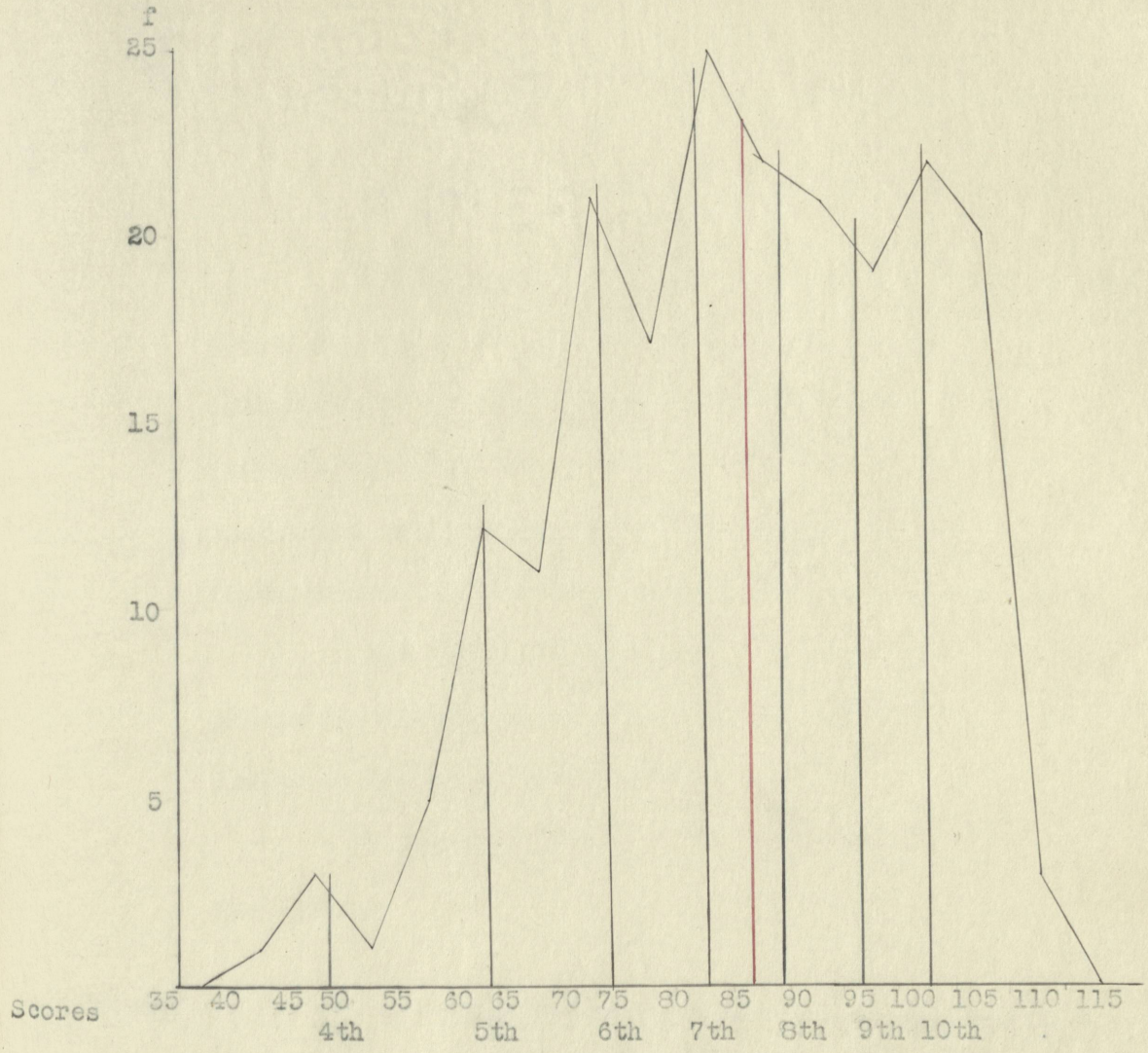

Figure VI. Showing the Distribution of Scores on the Stanford Word Meaning Test of 203 Seventh Grade Pupils.

The frequency distribution, mean, standard deviation, and median reading grade level on Chapman-Cook Speed of Reading Test are shown in Table VI. It is to be noted from a study of the distribution that there the greatest amount of grouping in the lower central part of the distribution.

The median reading grade level, 5.97, places the average speed of reading of the group almost on the sixth grade level.

Figure VII presents the same facts in graphical form.

TABLE VI

SCORES ON THE CHAPMAN-COOK SPEED OF READING TEST

Scores	F.
24-25	2
22-23	1
20-21	2
18-19	13
16-17	15
14-15	41
12-13	46
10-11	36
8-9	25
6-7	15
4-5	4
2-3	2
0-1	1
Total Number of Cases	203
Mean	12.72
S.D.	3.82
Median Reading Grade	5.97

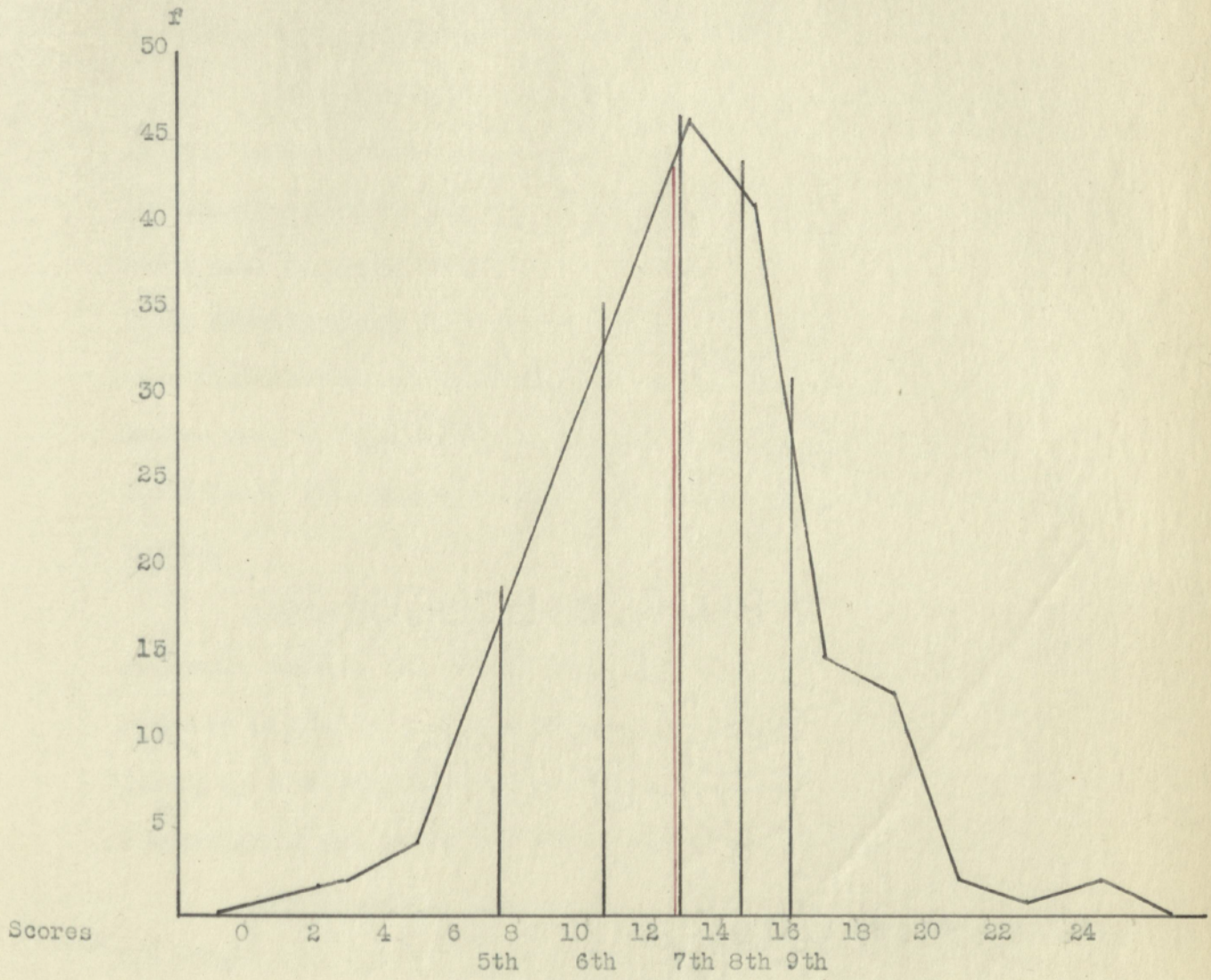

Figure VII. Showing Distribution of Scores on the Chapman-Cook Speed of Reading Test of 203 Seventh Grade Pupils.

The scores of the New Stanford Reading Test, The Gates Silent Reading Test, and the Chapman-Cook Speed of Reading Test were then weighted and separate test scores were combined into composite reading scores.

The scores were weighted according to their variability. By this method the standard deviation of each test was either multiplied or divided by some number or fraction of a number which would make it approximately equal to the other standard deviations, which were equalized in the same manner. The separate scores of each distribution were then multiplied or divided by the same number used in multiplying or dividing their respective standard deviations. The composite scores were computed for all of the 203 pupils.

Table VII shows the frequency distribution of the composite scores. The scores range from 66 to 196 with a mean score of 137.02 and a standard deviation of 29.53. There is some piling up of scores near the upper end of the series, while the dispersion is greater in the lower part of the distribution.

Figure VIII pictures a more regular outline than do the single measures of reading. This combination of scores takes into account the different kinds of reading, and should, therefore, be a better measure of reading attainment than any one measure taken alone.

TABLE VII

COMPOSITE READING SCORES

Scores	F
190-199	2
180-189	14
170-179	15
160-169	19
150-159	24
140-149	23
130-139	21
120-129	25
110-119	19
100-109	18
90-99	10
80-89	7
70-79	5
60-69	1
Total Number of Cases	203
Mean	137.02
S.D.	29.53

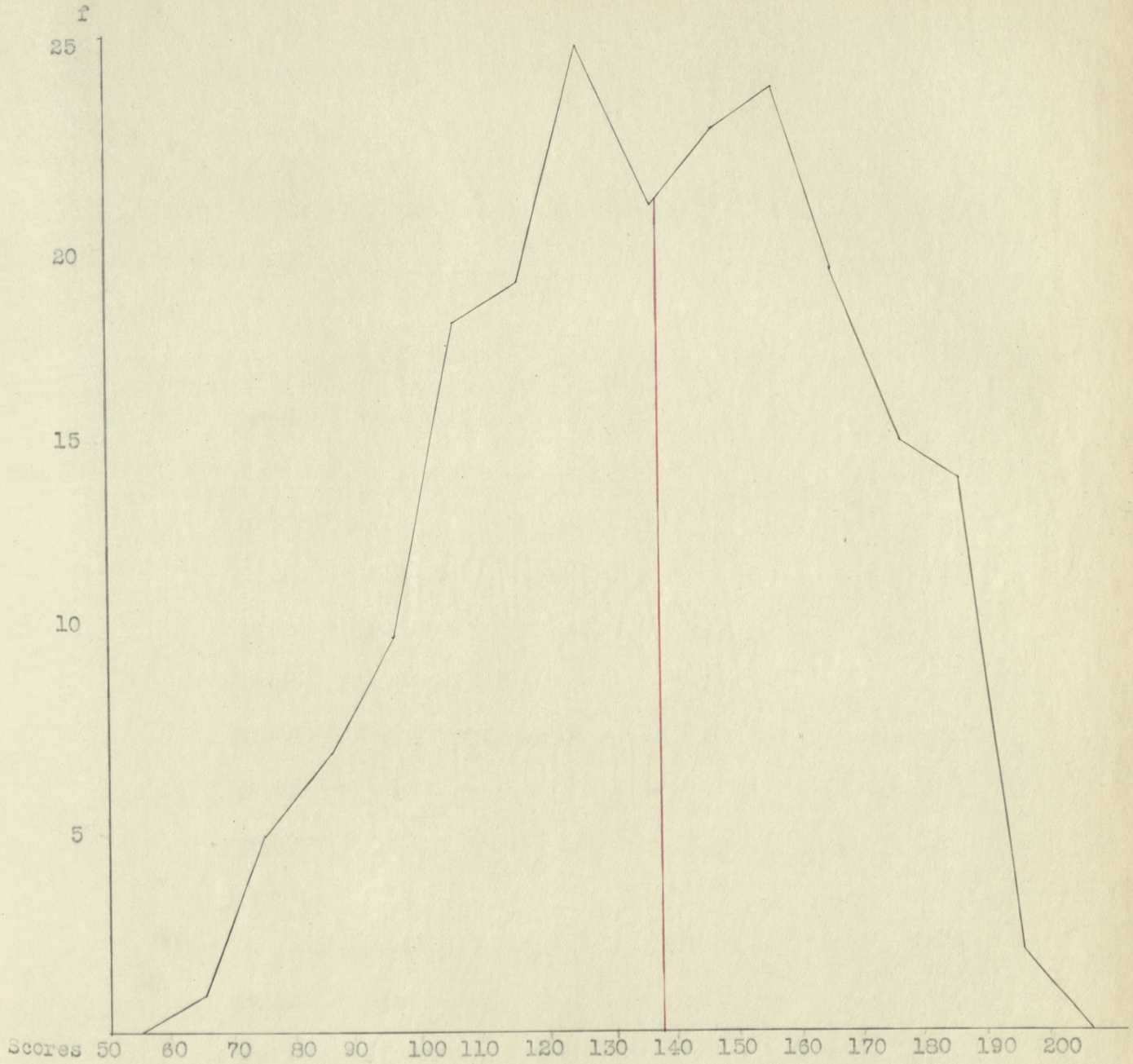

Figure VIII. Showing Distribution of Composite Reading Scores of 203 Seventh Grade Pupils.

SUMMARY OF DATA ON DISTRIBUTIONS OF RAW SCORES OF READING TESTS

An investigation of the distributions of raw scores of the different reading test results reveals the following significant facts:

1. On all four of the Gates tests, the mean scores of the group indicate below average performance when compared with norms. In Types B and C the reading ability ranges from third grade level to eleventh grade level and above. In Types A and D, the range is from below fourth grade level up to and above eleventh grade level. The dispersion is greatest in Type B. The highest level of achievement is represented by a reading grade level of 7.68 on Type C; the lowest attainment is represented by a reading grade level of 6.48 made on Type D.

2. The results of the New Stanford Test of Paragraph Meaning reveal a higher level of achievement. The pupils score almost a whole grade above the average for seventh grade. This test requires more abstract thinking than Gates Type A, as the answers are not selected and presented in the form of choices, but the reader must select for himself the words to fill in the blanks. It resembles Type C, to some extent. In Type C, the pupil has to do more reasoning than in some of the other types of

Gates tests. The results of Type C and of Paragraph Meaning are more comparable than are the results of the other types with scores of the Paragraph Meaning Test.

3. The Word Meaning Test with a mean reading grade level of 7.47, shows almost average achievement. While the standard deviation is almost the same on these two Stanford tests, the scores on this second test are spread more evenly within narrower limits.

4. The Chapman-Cook Speed of Reading Test discloses the greatest amount of variation from established norms. The median reading score for the seventh grade as given in the norms is 14.5, and the mean reading score of the group being studied is 12.72. This score falls nearest to the sixth-grade median score of 12.80.

5. The composite reading scores indicate great range in reading proficiency. This distribution shows a piling up of scores in the upper limits, which means that the dispersion is greater in lower limits. It also foretells greater scatter in achievement on reading tests and in school achievement among those in the lower parts of the distributions.

C. Certain Relationships Between Criteria

For further study of reading abilities the coefficient of correlation technique was used as a means of measuring relationships

between reading test results and achievement in various school subjects. Correlations were also computed between composite reading scores and C.A., M.A., and I.Q.

Table VIII presents the findings of this division of the investigation.

Composite Reading Scores and C.A.

The correlation between composite reading scores and C.A. reveals a negative relationship. A correlation of -.47 .036 is high enough to show a significant relationship between chronological age and achievement in reading. Those scoring in the upper limits of reading tests were, evidently, in the lower limits of the distribution of chronological ages.

TABLE VIII

CORRELATIONS

Variables	r	P.E. r.
Composite Reading Score - C.A.	-.47	± .036
Composite Reading Score - M.A.	.77	± .020
Composite Reading Score - I.Q.	.75	± .020
Composite Reading Score - Gray's Oral Paragraphs	.88	± .013
Composite Reading Score - Average of 7th Grade Marks	.50	± .035
Composite Reading Score - Mathematics	.37	± .040
Composite Reading Score - English	.52	± .034
Composite Reading Score - Social Science	.56	± .032
Composite Reading Score - Science	.49	± .036
Composite Reading Score - Music, Art, Home Economics, or Home Mechanics, and Phy. Ed.	.38	± .040
Gates Type A - Social Science	.33	± .042
Gates Type B - Social Science	.47	± .037
Gates Type C - Social Science	.58	± .031
Gates Type D - Social Science	.50	± .035
Gates Type A - Science	.27	± .044
Gates Type B - Science	.37	± .040
Gates Type C - Science	.48	± .036
Gates Type D - Science	.41	± .039
Gates Type A - Mathematics	.19	± .045
Gates Type B - Mathematics	.34	± .042

TABLE VIII (CONT.)

		r	P.E. r.
Gates Type C	Mathematics	.42	± .038
Gates Type D	Mathematics	.34	± .042
Gates Type A	English (Literature)	.33	± .042
Gates Type B	English (Literature)	.48	± .036
Gates Type C	English (Literature)	.54	± .034
Gates Type D	English (Literature)	.45	± .038
Gates Type A	English (Grammar)	.31	± .042
Gates Type B	English (Grammar)	.54	± .042
Gates Type C	English (Grammar)	.47	± .036
Gates Type D	English (Grammar)	.42	± .039
Chapman-Cook Speed of Reading - Paragraph Meaning		.64	± .028
Chapman-Cook Speed of Reading - Average of 7th Grade Marks		.36	± .040
Word Meaning	Average of 7th Grade Marks	.48	± .036
Paragraph Meaning	Average of 7th Grade Marks	.58	± .031

Composite Reading Score and M.A.

The correlation found between composite reading scores and mental ages is as high as the correlations found between two reading tests. The high correlation of .77 ± .020 may indicate that those who are efficient in reading excel in reading because of high mental capacity, or it may show that intelligence tests really measure reading ability.

Composite Reading Scores and I.Q.

The coefficient of correlation of .75 ± .020 between composite reading scores and I.Q. is a little lower than that found between composite reading scores and M.A. This is due to the addition of the chronological age factor. This correlation is high because of the fact that intelligence is a very important factor in achievement in any subject. It may also be higher because of the method of measuring of mental capacity. The use of group mental tests requires the use of reading, and thus those handicapped by poor reading habits are not measured as accurately as are proficient readers. Intelligence tests and reading tests measure many elements in common.

Composite Reading Scores and Gray's Oral Paragraphs

Gray's Oral Paragraphs were administered to only 121 of the group who were found in the highest and lowest quartiles on all of the reading measures. The very high correlation of .88 ± .013 is somewhat spurious because of the selection of extreme groups. This correlation is of little value in comparing the relation of oral and silent read-

ing ability of the whole group.

Composite Reading Scores and Seventh Grade Average Marks

A correlation of .50 ± .035 was found between composite reading scores and average marks, including all of the marks received in the seventh grade. This correlation is higher than the correlations between composite reading scores and mathematics, and composite reading scores and a combination of music, art, home economics, or home mechanics, and physical education, but lower than the correlation between composite reading scores and English, and composite scores and social science. This lower correlation is to be expected since mathematics and the combination of the four subjects are included in the seventh grade average marks.

It is important to note that the correlations made with composite reading scores run higher than do those made with the single tests. This is due to the fact that the composite score takes account of the different elements measured in the single tests, and thus leads to higher correlations in most cases. Usually several types of reading are involved in the study of any subject, hence it is to be expected that the composite score would show greater relationship to achievement than do any of the single tests.

Composite Reading Scores and Seventh Grade Marks in Mathematics

The correlation of .37 ± .040 though not high in relation to the other correlations, shows that reading ability does affect mathe-

matics marks. In mathematics, however, reading is not so essential to success. Problems are often worked by a rule or a formula, which is explained before the work is begun, thus there is less need for reading ability of a general type and more need for precise reading.

Composite Reading Scores and English Marks

There is a very marked relationship existing between achievement in reading and English marks as is disclosed by the correlation of .52 ± .034. Reading ability is especially needed in all English study, in fact, an English course involves study in reading of varying types. It is quite obvious then, that this measure of the different types of reading should show definite relationship to English marks.

Composite Reading Scores and Seventh Grade Social Science Marks

The highest coefficient of correlation found between composite reading scores and marks in school subjects is .56 ± .032, the correlation resulting from the comparison of composite reading scores and social science marks. This marked positive relationship is important in showing the value of reading ability to achievement in the social science studies. In this course, as in English, varying kinds of reading are used. The results of this correlation indicate the same fact.

Composite Reading Scores and Average of Marks in Music, Art, Home Economics or Home Mechanics, and Physical Education.

The correlation of .38 ± .040 denotes relationship between

general reading capacity and a combination of the subjects of music, art, home economics or home mechanics, and physical education. This correlation is lower than those found between composite reading scores and English and composite reading scores and social science, but it shows a definite positive relationship between achievement in reading and this combination of subjects.

Composite Reading Scores and English (Literature)

Among the highest of the correlations found between composite reading scores and school subjects is the result of .52 ±.034, which represents the relation between reading ability and the literature division of English. This correlation signifies an important relationship between reading achievement and achievement in the literature course. As literature courses are primarily reading courses, a positive relationship between reading ability and marks in the subject is expected.

Composite Reading Scores and Marks in Grammar

The relationship found between composite reading scores and grammar marks is represented by the coefficient of correlation of .43 ± .038. This comparison points out the fact, that reading ability has a contribution to make to grammar achievement. It may be that the processes of abstract thinking required in grammar are also required in the ability to read.

In an attempt to find the types of reading required in the different school subjects, the four types of Gates Silent Reading Test

were correlated with marks in the different school subjects. These correlations do not average as high as do the correlations made with composite reading scores and school subjects, because of the fact that they do not measure or take into account as many of the factors involved in reading as do the composite measures. They are important, however, in measuring amounts of different types of reading used in the different subjects.

Gates Silent Reading Test and Social Science

The correlation calculated between each of the four types of Gates Silent Reading Test and social science grades range from $.33 \pm .042$ to $.58 \pm .031$. The lowest correlation of $.33 \pm .042$, indicating the relationship between Reading for General Significance and social science marks, although lower than the other correlations is almost eight times its probable error. The correlation of $.58 \pm .031$ between Reading to Understand Precise Directions and social science represents the greatest relationship found between any one of the types of reading and grades in a school subject.

The relationship existing between Reading to Predict the Outcome of Given Events and social science achievement is signified by the correlation of $.47 \pm .037$. A higher correlation of $.50 \pm .035$ resulted from the comparison of the results of Gates Type D, Reading to Note Details, and social science grades.

Social science studies include the study of history, geography, and related subjects. The wide variety of subject matter studied in such a course would naturally require varying amounts of different kinds of reading. The correlations between the four types of the Gates test and social science grades average higher than correlations between Gates Silent Reading Tests and any other of the school subjects. These correlations denote marked positive relationship; they suggest that one reads for various purposes in studying the different phases of social science.

Correlations Between Gates Silent Reading Test and Science

The relationship expressed by the coefficients of correlation between the different types of reading and science marks ranges from .27 ± .044 to .48 ± .036. The highest correlation of this group was found between Type C and science; the lowest correlation resulted from the correlation of the results of Type A and science marks.

The study of science demands an accurate type of reading when experiments are being performed. Gates Type C, Reading to Understand Precise Directions, is essential to success in science courses. The correlation of .41 ± .039, indicating the measure of relationship between Reading to Note Details and progress in science study, is evidence that reading for detailed information also has a great role to play in the science study. Reading for General Significance is of least value in the study of science, although it has some part to play as the correlation of .27 ± .044 indicates. These measures of single types of reading do not correlate as highly with the different school subjects as does the composite reading score, but they are important in measuring somewhat isolated processes involved in progress in the different subjects.

Gates Silent Reading Test and Mathematics

An analysis of correlations made between the types of Gates Silent Reading Test and mathematics leads to the conclusion that reading ability does not condition efficiency in mathematics as

much as it does in other subjects.

The correlations between the results of the different types of reading and mathematics range from .19 ± .045 between Type A and mathematics, to .42 ± .038 between Type C and mathematics. The comparatively high correlation of .42 ± .038 found between Type C and mathematics signifies that those who can understand precise directions make greater progress in mathematics. Mathematics problems are often worked by rule or formula, and thus it becomes necessary to note accurately the exact procedure to be followed in solving problems. The correlation of .19 ± .045 between Gates Type A and mathematics implies that reading for general significance has some place in achievement in mathematics, but its value is not equal to that of any of the other three types.

Relation Between Gates Silent Reading Test and the Study of Literature

The study of literature makes use of many psychological processes because of the variety of types of reading demanded in such a course. The correlation of .33 ± .042 expressing the relationship between Gates Type A, Reading for General Significance, and literature grades shows a smaller degree of relationship than do any of the other types and literature. The coefficient of correlation of .54 ± .034 resulting from a comparison of the results of Type C, Reading to Understand Precise Directions, and literature marks represents the highest relationship existing between the different types of reading and achievement in literature.

The mental processes involved in reading to predict the outcome of given events and reading to note details are essential in the study of literature as is shown by the correlations of .48 ± .036 and .45 ± .038 found between the scores of Types B and C and literature grades.

According to educational theory one would expect the results of Type A, Reading for General Significance, to correlate highest with literature marks, but reading of a more accurate and detailed type is of greater importance in the study of literature as the correlations indicate.

Gates Silent Reading Test and Grammar

An analytical study of the relation existing between the scores made on each of the four types of reading and marks received in grammar discloses correlations ranging from .31 ± .042 to .47 ± .036. The correlation of .47 ± .036 indicates that Type C, Reading to Understand Precise Directions, is more closely related to progress in grammar than any other type of reading. Another type of reading which is vitally important in conditioning achievement in grammar is Type D, Reading to Note Details; a correlation of .42 ± .039 expresses the relationship between this technique of reading and success in grammar study.

The study of grammar involves more than a hasty perusal of the subject matter; facts must be weighed; relationships must be noted; and careful analysis must be made at each step of the study. Although reading for general meanings has some place in grammar study, reading for precise directions and reading to note details are of greater usefulness. The correlation of .34 ± .042 shown by a comparison of the results of Type B, Reading to Predict the Outcome of Given Events, and grammar marks is slightly higher than that found between Reading for General Significance and grammar, but it is lower than the other two correlations.

Chapman-Cook Speed of Reading and Paragraph Meaning

The correlation of .64±.028, obtained from correlating the scores of Chapman-Cook Speed of Reading Test with the scores of the Paragraph Meaning test, is higher than correlations between school subjects and types of reading. This is to be expected as both of these tests are reading tests. Two tests of reading would naturally be more closely related than would achievement in a school subject and scores on a test of a single type of reading. These tests measure the different processes of reading more fully than do individual types, hence the correlations are higher.

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The Chapman-Cook Speed of Reading Test and Seventh Grade Average Marks

A correlation of .36±.040 was found between speed of reading, as measured by the Chapman-Cook Speed of Reading Test, and seventh grade average marks. This correlation indicates that speed of reading and achievement in school subjects are related. A slow rate of reading is often caused by poor reading habits which lead to deficiencies in comprehension and, in some cases, to slow progress in school work. In the lower grades speed of reading is neglected in the effort to master the mechanics of reading, but as the pupil advances to higher grades in which more reading is required, he finds it necessary to increase his speed of reading for the sake of economy of time.

Word Meaning and Seventh Grade Average Marks

The correlation of .48 ± .036 between the results of the Word Meaning Test and seventh grade average marks reveals a close relationship existing between the two variables. Each school subject has its own terminology, words which are suited to its content, and if progress is to be made the child must increase his reading vocabulary as he advances from grade to grade.

J.M. McCallister gives meager reading vocabulary as one of the causes of failures in reading in his study of reading difficulties in content subjects.[1]

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Paragrah Meaning and Seventh Grade Average Marks

A correlation of .58 ± .031 was found in the correlation made between the Stanford Paragraph Meaning Test and seventh grade average marks. This test requires the use of abstract thinking, and the ability to carry an idea on through to the end of a paragraph. It is different from Gates test in the method of recording responses. In the Paragraph Meaning Test one has to recall and record the word which completes the meaning of the paragraph instead of having suggestions made at the close of each paragraph which are to be under-

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1. J.M. McCallister, "Reading Difficulties in Studying Content Subjects." Elementary School Journal, Nov. 1930, p. 199.

lined, as is the arrangement of the Gates test.

The Paragraph Meaning Test involves most of the processes measured in Gates Silent Reading Test, but not in distinct types. It is probably a more adequate measure of reading than any single type of the Gates test, for this reason it should correlate higher with achievement than do most of the single tests.

Brief Summary of Correlations

From a study of the facts revealed in this division of the study, the following statements are made in summarizing results:

1. The correlation found between chronological ages and composite reading scores shows a negative relationship, indicating that younger pupils score in the upper limits on various reading measures.

2. High correlations resulted from the comparisons of mental age and I.Q. with composite reading scores. These two correlations signify that mental capacity is one of the most important factors determining achievement on all measures.

3. The correlation between oral reading and silent reading is not a representative measure for the entire group as more of the extreme abilities are considered in this result because of the selection of the groups to be tested in oral reading.

4. The correlations made between composite reading scores and separate school subjects show higher relationships than do the correlations between the four types of Gates tests and the different school subjects.

5. It is evident from the results of the correlations of the different types of the Gates Silent Reading Test with school subjects that different school subjects require varying amounts of the different reading techniques. Some subjects, such as social science and literature, correlate higher with most of the tests than do other subjects. Type C, Reading to Understand Precise Directions correlates highest with each of the subjects; Type A, Reading for General Significance correlates lowest with the different subjects.

6. A high correlation of $.64 \pm .028$ was revealed between Chapamn-Cook Speed of Reading Test scores and Paragraph Meaning Test socres. This indicates that speed of reading and comprehension are definitely related.

7. In the correlations between Word Meaning and seventh grade marks, and Paragraph Meaning and seventh grade marks comparatively high correlations resulted.

D. Comparison of High and Low Groups Selected on Different Bases.

I. Comparison of High and Low Groups Selected on Basis of Mental Ages.

For further study, the pupils were grouped into High and Low Groups, representing the highest and lowest quartiles in mental age. The High Group was then compared with the Low Group on the following measures: Gates Silent Reading Test, Chapman-Cook Speed of Reading Test, and composite reading scores. The mean mental age for the High Group was approximately fourteen years; for the Low Group the mean mental age was approximately nine years.

TABLE IX

Mental Ages Used as Basis for Comparison of Group on Various Measures

High Group	Type A	Type B	Type C	Type D	Speed Test	Comp. Reading
Mean Score	18.12	20.22	19.84	14.16	15.50	167.50
S.D.	3.85	2.99	2.65	5.72	2.41	15.25
Mean Reading Grade	8.56	9.63	9.94	9.55	7.67	
No. of Cases	50	50	50	50	50	50
Low Group						
Mean	11.29	10.82	11.01	28.13	9.44	106.93
S.D.	3.35	4.14	3.63	7.68	3.48	22.85
Mean R.G.	5.13	4.47	5.45	4.50	4.0 (approx.)	
No. of Cases	53	53	53	53	53	53

Differences in Performance of Groups on Type A - Reading for General Significance

The first column of Table IX compares the High and Low Groups on Gates Type A.

Group	Mean Score	σ (dis.)	D	P.E.(diff.)	$\frac{D}{P.E.(diff.)}$
High	18.12 (R.G. 7.56)	3.85			
Low	11.29 (R.G. 5.13)		6.83	.480	14.22

There is a difference of 6.83 points between mean scores, and a difference of 3.43 on mean reading grade. These great differences show that the pupils who are older mentally have a much higher performance record than do those who are younger mentally. The dispersion is slightly greater in the High Group. The reliability of the obtained difference expressed by $\frac{D}{P.E.(diff.)}$ is more than three times as much as it would need to be to insure complete reliability.

Differences on Type B-Reading to Predict the Outcome of Given Events

In the second column of Table IX are given the results of the High and Low Groups on Type B, Reading to Predict the Outcome of Given Events.

Group	Mean Score	σ (dis.)	D	P.E.(diff.)	$\frac{D}{P.E.(diff.)}$
High	20.22 (R.G. 9.63)	2.99			
Low	10.82 (R.G. 4.93)	4.14	9.40	.478	19.67

There is a difference of 9.40 between the two mean scores, and a corresponding difference of 4.70 reading grades between the grade equivalents of the mean scores. The dispersion is almost twice as great in the Low Group as is in the High Group. The $\frac{D}{P.E.(diff.)}$ is much greater than necessary to insure complete reliability.

Differences in High and Low Groups on Type C, Reading to Understand Precise Directions

In the third column of Table IX are found the mean score and mean grade, standard deviation and number of cases of the two groups.

Group	Mean Score	σ(dis.)	D	P.E.(diff.)	$\frac{D}{P.E.(diff.)}$
High	19.84 (R.G. 9.94)	2.65	8.83	.421	20.97
Low	10.01 (R.G. 5.00)	3.63			

In this comparison the differences are similar to those found in the two previous comparisons. The mean score difference is 8.83 points indicating a reading grade difference 4.76 reading grades.

The amount of dispersion is greater in the Low Group. The $\frac{D}{P.E.(diff.)}$ of 20.95 is more than five times as large as that needed to indicate complete reliability.

Performance Differences of the Two Groups on Type D, Reading to Note Details

The fourth column in Table IX compares the groups on Type D.

Group	Mean Score	σ (dis.)	D	P.E.(diff.)	$\frac{D}{P.E.(diff.)}$
High	44.16 (R.G. 9.55)	5.72	16.03	.897	17.87
Low	28.13 (R.G. 4.61)	7.68			

The difference in performance of the two groups on Reading to Note Details presents another case of great variation of results between those who have high mental ages and those who have low mental ages. A mean score difference of 16.03 points indicates a corresponding difference of 4.91 reading grades. Again the amount of scatter is much larger in the Low Group. The reliability of the obtained difference is made sure by a $\frac{D}{P.E.(diff.)}$ of 17.87.

Variation of Performance Records on Chapman-Cook Speed of Reading Test of High and Low Groups

In the fifth column of Table IX are found the records of the High and Low Grpups on performance in the Chapman-Cook Speed of Reading Test.

Group	Mean Score	σ (dis.)	D.	P.E.(diff.)	$\frac{D}{P.E.(diff.}$
High	15.50	2.41	6.06	.396	15.30
Low	9.44	3.48			

High mental age seems to play a great part in determining high speed of reading scores. The difference in mean scores of 6.06 points, interpreted in terms of median performance, according to established norms, is equal to approximately three and one-half grades difference in achievement. The standard deviation is again greater in the Low Group. The $\frac{D}{P.E.\ (diff.)}$ of 15.30 gives assurance of adequate reliability of the obtained differences.

Differences in Performance of High and Low Groups on Composite Reading Scores

In the last column of Table IX the High and Low Groups are compared on composite reading scores.

Group	Mean Score	(dis.)	D	P.E.(diff.)	$\frac{D}{P.E.(diff.)}$
High	167.50	15.25	60.57	2.549	23.76
Low	106.93	22.85			

The older pupils mentally have a higher composite mean reading score than have those lower in mental capacity. The difference in mean scores is 60.57 points. The Low Group has a greater degree of dispersion. A reliable difference is shown by $\frac{D}{P.E.(diff.)}$ of 23.76, which is almost six times the amount needed to indicate complete reliability.

Brief Summary of Comparisons of High and Low Groups Selected on the Basis of Mental Age

The comparisons of High and Low Groups selected on the basis of mental age show great differences. The summary of the comparison of the groups on various measures follows:

1. Those who rank in the High Group mentally also rank in the upper limits in achievement on all of the measures. Those who range within the lower limits of the mental ages are found in the lower parts of the distributions of the measures used in making comparisons.

2. With the exception of Gates Type A, the Low Group had a greater amount of dispersion than the High Group in all of the comparisons.

3. In every case the obtained difference between two means was sufficiently large to insure complete reliability.

4. The smallest difference between groups was found on Gates Type A, and the greatest difference was shown in composite reading scores.

II. Comparison of High and Low Groups Selected on the Basis of Seventh Grade Average Marks

Those who fell within the highest and lowest quartiles in the distribution of average marks were selected as High and Low Groups respectively. The High Group was then compared with the Low Group on the four types of Gates Silent Reading Test.

The letter grades were weighted as follows: E = 4; G = 3; M = 2; P = 1; and F = 0. The mean average grade for the High Group was 3;81; for the Low Group the mean average grade was 1.61.

TABLE X

Average Marks Used For Selection of Groups for Comparison on Different Measures

High Group	Type A	Type B	Type C	Type D
Mean Score	15.32	17.68	18.42	40.37
S.D.	4.43	4.26	3.71	7.36
Mean Reading Grade	7.17	8.35	9.20	8.36
No. of Cases	51	51	51	51
Low Group				
Mean Score	12.75	12.53	12.22	30.77
S.D.	4.23	4.96	3.98	8.36
Mean Reading Grade	5.89	5.80	6.10	4.88
No. of Cases	53	53	53	53

Differences in Performance of Groups on Type A, Reading for General Significance.

The first column of Table X gives the results of Gates Type A, Reading for General Significance.

Group	Mean Score	σ (dis.)	D.	P.E.(diff.)	$\frac{D}{P.E.(diff.)}$
High	15.32 (R.G. 7.17)	4.43	2.57	.573	4.49
Low	12.75 (R.G. 5.85(	4.23			

There is a difference of 2.57 points between the mean score indicating a grade difference of 1.28. Although this difference is not so great as those found in other comparisons it is completely reliable. The dispersion is practically the same in both groups.

Comparison of Groups on Results of Gates Type B, Reading to Predict Outcome of Given Events

The mean score, standard deviation, and mean reading grade are given in the second column of Table X, for the purpose of comparing the High Group with the Low Group on Type B, Reading to Predict the Outcome of Given Events.

Group	Mean Score	σ(dis.)	D.	P.E.(diff.)	$\frac{D}{P.E.(diff.)}$
High	17.68 (R.G. 8.35)	4.26	5.10	.559	9.12
Low	12.58 (R.G. 5.80)	4.96			

There is a reliable difference of 5.10 points between mean scores of the Groups and a corresponding grade difference of 2.55. The amount of dispersion is a little greater in the Low Group.

Comparison of the Differences of the High Group and the Low Group on Gates Type C, Reading to Understand Precise Directions

The group comparisons on Type C are found in column three of Table X.

Group	Mean Score	σ (dis.)	D.	P.E.(diff.)	$\frac{D}{P.E.(diff.)}$
High	18.42 (R.G. 9.20)	3.71			
Low	12.22 (R.G. 6.10)	3.98	6.20	.509	12.18

Again there is great difference in the mean performance of the High Group and the Low Group as is indicated to the mean difference of 6.20 points or the reading grade difference of 3.10. The standard deviations show a greater scatter from the central tendency in the Low Group. The $\frac{D}{(P.E.diff)}$ is an indication of complete reliability.

Comparison of High and Low Groups on Gates Type D, Reading to Note Details.

In the fourth column of Table X are recorded the results of the High and Low Groups on Gates Type D, Reading to Note Details.

Group	Mean Score	σ (dis.)	D.	P.E.(diff.)	$\frac{D}{P.E.(diff.)}$
High	40.37 (R.G. 8.36)	7.38			
Low	30.77 (R.G. 4.88)	8.36	9.60	10.44	9.19

There is a great difference in performance of the High and Low Groups on this test as is shown by the mean score difference of 9.60, equivalent to a difference in reading grades of 3.48. The obtained difference is more than twice the amount needed to insure complete reliability.

Summary of Differences in Performance of High and Low Groups on Various Measures

Using seventh grade marks for the basis of selection of High and Low Groups, comparisons on the four types of Gates Silent Reading Test lead to the following statements:

1. There is a greater amount of dispersion in the Low Group on all measures excepting Gates Type A; on this measure the standard deviations are almost the same. The Low Group was found to be more variable in the comparisons made of the groups selected on the basis of mental age also.

2. There is a completely reliable difference on each of the four tests. The smallest difference resulted from the comparison on Type A; the greatest difference was obtained from the comparison on Type D.

3. The High Group made a higher performance record on each of the four measures.

4. The greatest obtained difference in mean performance, found on Type D, indicates that development in Type D should effect a greater difference in school achievement than development of some of the other types. This fact is substantiated by the comparatively high correlations found between Type D and school achievement in various subjects.

5. The differences between the high and low groups scholastically on the various reading measures are not as

great as when the groupings are made on the basis of the intelligence test scores. This would indicate that there was a greater degree of relationship between the mental scores and reading performance than between scholarship and reading ability.

III. Comparison of Groups Selected on Basis of Various Reading Measures

For further investigation of reading abilities, High and Low Groups were selected on the basis of reading measures. Those who ranked in the highest quartile on each of the seven measures of reading were designated as the High Group; those who ranked in the lowest quartile on each measure comprised the Low Group. These High and Low Groups were compared on the following measures: C.A., M.A., I.Q., average marks, and Gray's Oral Reading Paragraphs.

TABLE XI

Comparison of High and Low Groups Selected on Basis of Reading Measures

High Group	C.A.	M.A.	I.Q.	Average Marks	Oral Paragraphs
Mean	123.32 (12 3/12 yrs.)	185.33 (15 5/12 yrs)	123.32	2.85	39.30
S.D.	7.28 months	13.25 months	9.90	.57	4.10
No. of Cases	33	33	33	33	33
Low Group					
Mean	167.53 (14 years)	143.00 (11 11/12 yrs)	86.34	1.83	19.06
S.D.	10.97 months	7.68 months	7.95	.37	6.47
No. of Cases	32	33	33	33	33

Comparison of Groups on Chronological Ages

In the first column of Table XI are given the mean and standard deviation of the High and Low Groups according to chronological age.

Group	Mean	σ(dis.)	D	P.E.(diff.)	D / P.E.(diff.)
High	150.53 (12 3/12 yrs)	7.28 mos.			
Low	167.53 (14 yrs.)	10.27 mos.	17 (1 5/12 yrs.)	1.23	13.82

The comparison of measures of central tendencies of the Groups indicates a higher chronological age for the Low Group. The standard deviation shows that there is a much greater degree of dispersion in the distribution of the ages of the Low Group. The difference is great enough to be completely reliable.

Differences on Mental Ages

The second column of Table XI gives the data on mental ages.

Group	Mean	σ(dis.)	D	P.E.(diff.)	D / P.E.(diff.)
High	185.23 (15 5/12 yrs)	13.25 mos.			
Low	143.00 (11 11/12 yrs)	7.68 mos.	42.23 (3 6/12 yrs)	1.5	28.15

The obtained difference in means reverses the conditions found in chronological ages, as the High Group is younger in life years, but older in mental age than the Low Group. There is enough difference to indicate complete reliability.

Comparison of High and Low Groups on I.Q.

In the fourth column of Table XI are given the mean and standard deviation of the I.Q. distributions.

Group	Mean	σ(dis.)	D	P.E.(diff.)	$\frac{D}{P.E.(diff.)}$
High	123.32	9.90	36.98	1.198	30.78
Low	86.34	7.95			

The difference of 36.98 points between the means of the High Group and the Low Group is an indication of great difference in mental capacities of the groups. The amount of dispersion is somewhat greater in the upper or High Group. The obtained difference is more than seven times as great as it needs to be to insure complete reliability.

Comparison of Groups on Seventh Grade Average Marks

The data on seventh grade marks are found in the fourth column of Table XI.

Group	Mean	σ(dis.)	D.	P.E.(diff.)	$\frac{D}{P.E.(diff.)}$
High	2.85	.57	1.02	.064	15.94
Low	1.83	.37			

The High Group has a mean average grade of more than one grade point higher than the mean average grade of the Low Group. The High Group standard deviation is greater than that of the Low Group, thus indicating greater dispersion. The difference between the two groups is completely reliable.

Differences in Performance on Gray's Oral Reading Paragraphs

The last column of Table XI gives the results of Gray's Oral Reading Paragraphs made by the High and Low Groups.

Group	Mean	σ (dis.)	D.	P.E.(diff.)	$\frac{D}{P.E.(diff.)}$
High	39.30	4.10	20.24	.605	33.45
Low	19.06	6.47			

Just as large differences were found between High and Low Groups on silent reading measures; great differences are revealed from an analysis of test results of oral reading. The amount of dispersion is greater in the Low Group by almost two points.

Summary of Comparisons of High and Low Groups Selected on Basis of Reading Measures

The following facts are given as a brief summary of this division of the study:

1. Reliable group differences were found on the measures of C.A., M.A., I.Q., average marks, and Gray's Oral Reading Paragraphs.

2. The greatest difference was noted on Gray's Oral Reading Paragraphs, and the smallest difference was obtained between chronological ages.

E. Personal Interview

The personal interview technique was employed with those who ranked in the highest quartile on each of the reading measures, and with those who ranked in the lowest quartile on each reading measure. Information pertaining to the following factors was obtained: occupation of father, Sunday-School attendance, number of magazines in the home, kind of stories preferred, attendance of movies, radio in the home, attitude toward reading, number of schools attended, and travel.

Occupation of Father

The fathers of the children in the two groups were classified into three occupational groups. There were three pupils in the High Group and four in the Low Group whose fathers were dead.

TABLE XII

PERSONAL INTERVIEW DATA

Group	Occupation of Father: Professional	Occupation of Father: Commercial (Bus. and Clerical)	Occupation of Father: Industrial (Unskilled)	Sunday School Attend.: Regular	Sunday School Attend.: Occasional	Sunday School Attend.: Never	Magazine in Home: 0	Magazine in Home: 1-3	Magazine in Home: 4 or More	Kind of Stories Preferred: Adventure	Kind of Stories Preferred: Mystery	Kind of Stories Preferred: Nature	Kind of Stories Preferred: Fairy	Attendance at Movies: Regular	Attendance at Movies: Occasional	Attendance at Movies: Never	Radio in Home	Like to Read	Times Changed Schools: 0	Times Changed Schools: 1-2	Times Changed Schools: 3 or more	Never travelled	Travelled in the State	Travelled Outside State
High																								
Number of Cases	12	10	7	29	3	1	3	10	20	17	15	0	1	17	7	9	26	32	14	8	11	10	4	19
Low																								
Number of Cases	0	4	24	20	10	2	16	15	1	15	7	5	9	9	10	15	21	14	13	7	12	15	6	11

The first three columns of Table XII give the arrangement of the two groups with respect to the three occupational groups. In the first column, representing the professional group, there are no cases of the Low Group recorded, while in the High Group there are twelve. This great contrast is indicative of a corresponding difference in the social status of the families from which these children come.

The second column shows that there were ten of the High Group whose fathers belong to the commercial group, while only four of the fathers of the Low Group belong to this classification of occupation. In column three the number of unskilled fathers reaches twenty-four for the Low Group, and seven for the High Group.

In a comparison of these two groups in another part of this study, the mean intelligence quotients of the High and Low Groups were found to be 123 and 86, respectively. This comparison of occupational groups of the fathers leads to the conclusion that the more intelligent children on the whole, and hence those highest in achievement, tend on the whole to have fathers who are found in the higher occupations.

Sunday-School Attendance

In an analysis of the second group of data, twenty-nine of the thirty-three in the High Group attend Sunday-School regularly; in the Low Group twenty of the thirty-two are regular in their attendance of Sunday-School. Three in the High Group attend

occasionally, and one never goes to Sunday School. There are ten of the Low Group who go to Sunday-School occasionally, and one who never goes.

These results may be interpreted from different points of view. Since the High Group is designated as high on the basis of achievement in reading, and as they are more regular in Sunday-School attendance, one might conclude that Sunday-School attendance fosters reading interests, which leads to higher achievement in reading. Another inference might be that those most interested in reading are also most interested in Sunday-School because it does offer reading opportunities.

Magazines in the Home

The great contrast in the number of magazines in the home in relation to the two groups is proof that those in the High Group have more reading materials available, than those of the Low Group have. Sixteen of the Low Group have no magazines in their homes, while twenty of the High Group have four or more magazines coming to their homes regularly.

It is a well known fact that to interest children in reading, materials suitable to the ages and experience of the children must be provided. In naming the different magazines which came to their homes, the High Group of pupils named magazines suited to their age more often than did those of the Low Group. This fact indicates that the parents of those in the High Group provide for the reading interests of their children more adequately than the parents of the Low Group do.

Kinds of Stories Preferred

There is little difference in the two groups in the number choosing adventure stories as the kind of stories preferred. Each of the groups has the greatest number choosing this type of stories. Mystery stories were preferred by fifteen of the High Group and seven of the Low Group. Mystery stories probably give a greater place to mental activity and abstract thinking than do some other kinds. The Low Group has a greater number choosing fairy stories. This arrangement of choices points to the fact that those of the Low Group are less mature mentally than the High Group, and therefore prefer different kinds of reading.

Attendance of Movies

An analysis of the data on attendance of movies shows that the High Group has seventeen representatives who attend movies regularly; the Low Group has only nine in this category. The motion-picture with its accompanying sounds presents whole events in rapid succession. Experiences are multiplied very rapidly for the individual who can enter into and enjoy moving pictures. The movies are of great educational significance in familiarizing the child with life-like situations, and thereby contributing to his fund of general and specific knowledge. This added advantage gives the movie-going child a wider background, a greater accumulation of ideas, and hence wider reading interests.

Radio in the Home

There are twenty-six in the High Group and twenty-one in the Low Group in whose homes radios are to be found. This difference is not great, but the advantages are again in favor of the High Group. The radio, as well as the motion picture, brings the very finest talent and a wealth of entertainment with very little effort on the part of those who are being entertained and informed. The range of varities of programs is almost unlimited. Interest in current happenings is stimulated; the newspaper then brings more detailed accounts to satisfy suggestions aroused directly or indirectly by the radio.

Attitude Toward Reading

The amount of value which one will receive from a subject is determined to a certain degree by the attitude with which he approaches that subject. The fact that thirty-two children in the High Group expressed a liking for reading implies that attitude toward reading has some effect on achievement in reading. Eighteen in the Low Group said that they disliked reading, while fourteen indicated that they enjoyed reading.

The High Group may enjoy reading because of greater accomplishment in reading, or this greater accomplishment in reading may be a result of a favorable attitude toward reading. Those in the low group may be poor readers partly because of a dislike for reading, or they may dislike reading because it is such a difficult process for them.

Changing of Schools

No significant differences were found in the number of times that pupils changed schools with respect to the group to which they belonged. The conditions are a little more favorable for the High Group.

Travel

The last three columns of Table XII show that the High Group has an advantage over the Low Group because of a wider experience gained through travel. Although these measures of the amount and extent of travel are not so accurate, they do indicate that those who achieve the most in reading also have wider travel experiences. The higher social status of the High Group presupposes greater opportunities to be derived through travel.

Summary of Personal Interview Data

In an analysis of the personal interview data, it was found that those in the High Group have the advantage over the Low Group in every situation studied. Those in the High Group have better homes, as was indicated by the occupational groups to which their fathers belong. Along with better home conditions come more reading material, more advantages gained through Sunday-School attendance and attendance of movies, and travel experiences of a wider range.

F. Comparison of Different Elementary School Groups

There are six elementary schools in Lawrence which prepare pupils for junior high school. These six schools have 174 representatives in the seventh grade of the Lawrence Junior High School included in this study. To detect differences which might be due to school training of the first six grades, these pupils have been grouped into six groups representing the different schools.

The groups are not equal in number, and hence all comparisons are less reliable than they would be if the groups were more evenly divided.

For the sake of convenience, the six schools will be designated as Schools A, B, C, D, E, and F. The order in which they are arranged and the number in each school are as follows:

School A - Cordley - 37 pupils

School B - Woodlawn - 21 pupils

School C - Quincy - 35 pupils

School D - New York - 34 pupils

School E - Pinckney - 40 pupils

School F - Lincoln - 7 pupils.

Because of the small number of pupils from School F, the means and standard deviations of the distribution were not calculated. Neither was this school plotted on any of the graphs.

Chronological Ages of the Elememtary School Groups

In the first column of Table XIII, School A has recorded a mean chronological age of 12 1/12 years with a standard deviation of 10.06 months. This indicates a close grouping around a low mean chronological age.

School B has a mean chronological age of 13 1/12 years with a standard deviation of 7.50 months, as is shown in the second column of Table XIII. This standard deviation is smaller than that of School A, but the mean age is larger.

School C has a mean chronological age of 13 1/12 years, the same as School B, but the standard deviation is much larger showing greater dispersion in this distribution.

School D has a mean age which is practically the same as found in Schools B, C, and E, but the dispersion is much less than that found in the distributions of C and E.

School F has a median chronological age of 14 3/12, a year greater than any other measure of central tendency.

TABLE XIII

Chronological Ages of Elementary School Groups

Elementary School (Months)	A f	B f	C f	D f	E f	F f
200-204			1			
195-199			0			
190-194			0			
185-189			0		2	
180-184	1		1		2	
175-179	0		0	1	2	1
170-174	1	1	3	2	1	3
165-169	2	1	2	6	4	0
160-164	7	5	1	3	3	1
155-159	5	7	10	8	5	0
150-154	7	1	8	7	13	2
145-149	7	5	6	5	6	
140-144	4	1	2	1	2	
135-139	3		1	1		
Number of Cases	37	21	35	34	40	7
Mean	153.99 (12 10/12 yrs)	156.55 (13 1/12 yrs)	156.50 (13 1/12 yrs)	157.35 (13 1/12 yrs)	159.13 (13 3/12 yrs)	Median 170.83 (14 3/12 yrs)
S.D.	10.06	7.50	12.15	9.12	12.06	

Mental Ages of the Elementary School Groups

In this division the mental ages are presented in Table XIV in the same order as were the chronological ages in the preceding table. School A has the highest mental age with a mean of 14 7/12 years and a standard deviation of 17.52 months. This large deviation indicates a great scatter of cases. There is, however, a slight grouping at each end of the distribution.

School B has a lower mean and a smaller standard deviation than School A. It is very much like School C in central tendency and standard deviation. Schools C and E have very similar means and standard deviations. The range is somewhat greater in the case of School E. School D has the smallest mean and also the least amount of dispersion. School F has a median of 12 5/12 years.

Table XIV shows the distribution of School E to be the most extended and School D to be the most closely concentrated around its mean.

TABLE XIV

Mental Ages of Elementary School Groups

Elementary School	A	B	C	D	E	F
(Months)	f	f	f	f	f	f
200-204	2				2	
195-199	4		1		0	
190-184	4	1	2		0	
185-189	2	0	2	1	3	
180-184	3	2	2	1	2	
175-179	1	0	0	1	4	
170-174	2	3	5	7	3	1
165-169	5	3	5	5	4	2
160-164	6	3	3	2	5	0
155-159	3	4	4	5	6	0
150-154	2	3	3	9	6	0
145-149	1	0	5	2	0	2
140-144	2	1	1	0	1	1
135-139		1	2	1	3	0
130-134					1	0
125-129						1
Number of Cases	37	21	35	34	40	7
Mean	174.53 (14 7/12 yrs)	163.45 (13 9/12 yrs)	164.86 (13 7/12 yrs)	162.06 (13 6/12 yrs)	164.75 (13 9/12 yrs)	Med. 148.88 (12 5/12 yrs)
S.D.	17.52	12.87	15.35	11.07	15.50	

Intelligence Quotients of the Elementary School Groups

Table XV presents the I.Q. distributions of the elementary school groups. It discloses the fact that each of the schools has a mean I.Q. above 100. School A has the highest mean I.Q., as one would judge from the study of chronological and mental ages. It has also the greatest degree of dispersion, as has been true in both chronological and mental age comparisons.

School B has a mean I.Q. of 105.60, about the same as have Schools C and E, but the standard deviation is again less. School D has a lower mean I.Q. with a close grouping of cases near the central part of the distribution. School F has a median I.Q. of 96.25, with a great scatter of cases ranging from 70 to 110 in I.Q.

Comparison of Elementary School Groups on Gates Type A, Reading for General Significance

In Table XVI the schools are compared on Gates Type A, Reading for General Significance. There are very small differences in the measures of dispersion. School B has the smallest amount of dispersion, as is indicated by the standard deviation; School E has the largest standard deviation, or the greatest amount of dispersion.

School A has the highest mean score, 15.59, equivalent to a mean reading grade level of 7.30. With the exception of School F, with its reading grade of approximately 4.75, School C is the lowest in achievement in this type of reading.

TABLE XV

Intelligence Quotients of Elementary School Groups

Elementary School	A	B	C	D	E	F
I.Q.	f	f	f	f	f	f
145-149	1					
140-144	0					
135-139	2				1	
130-134	4		1		2	
125-129	6	1	2	1	2	
120-124	3	1	1	2	2	
115-119	2	2	5	2	4	
110-114	2	4	5	3	2	1
105-109	7	1	5	5	8	0
100-104	4	3	4	7	4	1
95-99	0	7	6	7	7	2
90-94	2	2	1	3	3	0
85-89	3		2	3	1	0
80-84	1		3	1	1	0
75-79					2	0
70-74					1	1
Number of Cases	37	21	35	34	40	7
Mean	114.53	105.60	105.93	103.09	105.62	Med. 96.25
S.D.	16.25	9.94	12.86	10.97	15.19	

TABLE XVI

Scores of Elementary School Groups on Gates Silent Reading Test

Type A

Elementary School	A	B	C	D	E	F
Scores	f	f	f	f	f	f
24-				2	3	
22-23	3		1	1	0	
20-21	5	3	2	0	4	
18-19	2	3	6	2	3	
16-17	5	4	3	2	4	
14-15	5	4	5	9	3	
12-13	8	2	6	4	10	2
10-11	6	4	3	6	7	2
8-9	2	0	8	3	4	1
6-7	0	1	1	5	2	1
4-5	1					1
2-3						
0-1						
Number of Cases	37	21	35	34	40	7
Mean	15.59	15.48	13.14	13.53	14.65	Median 10.50
Mean Reading Grade	7.30	7.25	6.08	6.25	6.83	4.75

Figure IX presents the same facts graphically. School E reaches a higher position on the graph, but the scores are scattering at either end of the distribution. There is much over-lapping in this figure.

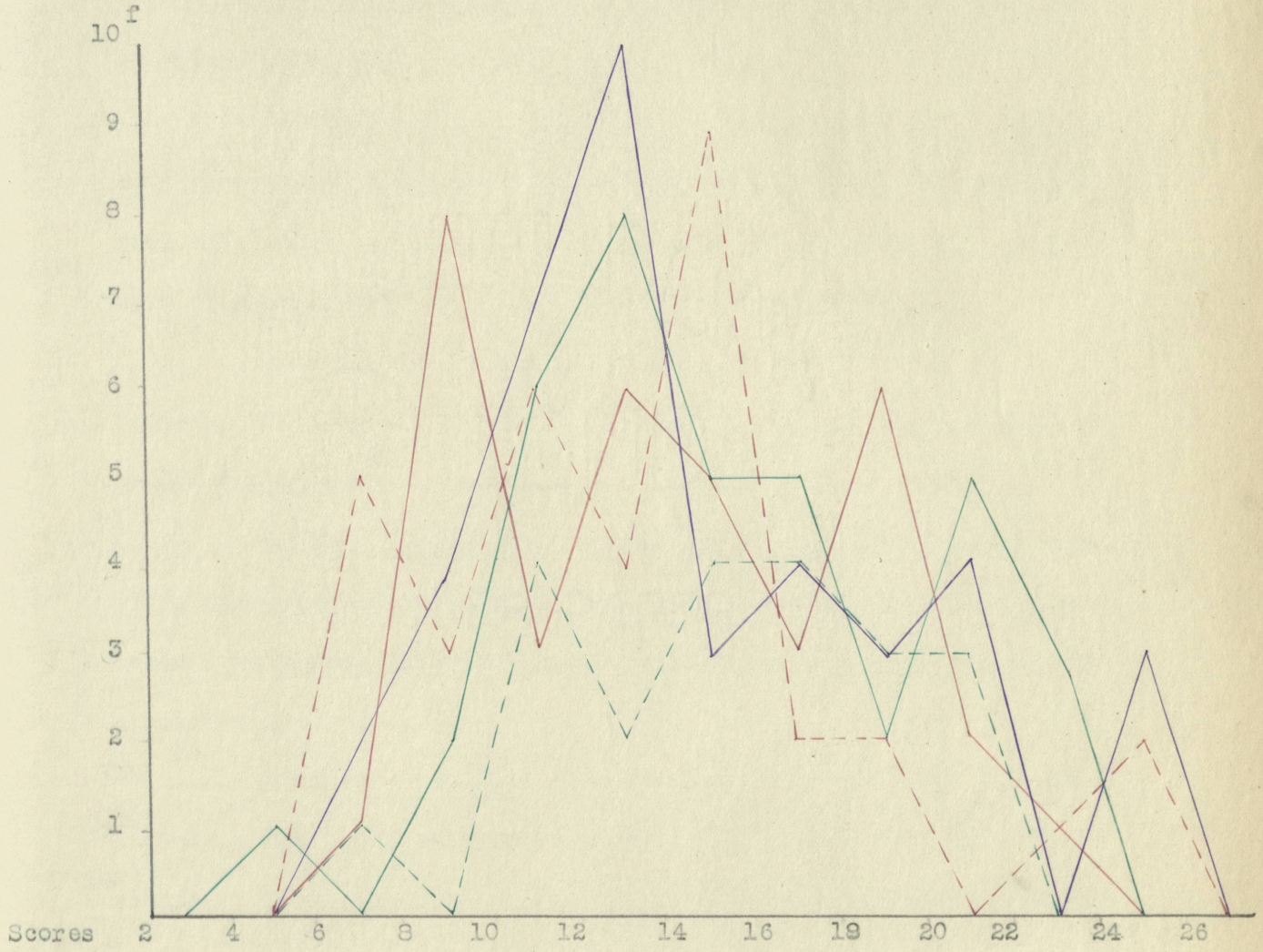

Figure IX. Distribution of Scores of Elementary School Group on Gates Type A

	Mean	S.D.
School A	15.59	4.53
School B	15.48	3.80
School C	13.14	4.28
School D	13.53	4.76
School E	14.65	4.81

School A ——
School B – – –
School C ——
School D – – – –
School E ——

Comparison of the Elementary School Groups on Gates Type B, Reading to Predict the Outcome of Given Events

The data on Gates Type B, Reading to Predict the Outcome of Given Events, are presented in Table XVII.

School B has the highest mean score and the lowest standard deviation of any of the schools. This fact indicates that the pupils from this school are with few exceptions consistently higher in this type of reading than are the pupils from the other schools.

School A and School E are similar in measures of central tendency and variability. Both of these schools have mean reading grades ranking almost as high as the reading grade of School B.

Schools B and D have mean scores and standard deviations which are practically the same, but which place them below the other schools in reading grade levels, with the exception of School F with a reading grade of 4.75.

Figure X shows Schools D and E reaching the same high point. Schools A and D have base-lines which extend beyond those of other schools. These extended base-lines are indicative of greater range.

TABLE XVII

Scores of Elementary School Groups on Gates Silent Reading

Test - Type B

Elementary School	A	B	C	D	E	F
Scores	f	f	f	f	f	f
24-	3	1	1	1	5	
22-23	0	2	1	2	2	
20-21	7	2	3	3	3	
18-19	4	3	7	2	0	
16-17	6	5	1	2	5	1
14-15	4	1	3	10	10	0
12-13	5	4	9	5	6	1
10-11	2	2	3	5	5	2
8-9	4	1	6	2	2	1
6-7	0		1	0	1	1
4-5	1			1	1	1
2-3	1			1		
Number of Cases	37	21	35	34	40	7
Mean	15.97	16.81	14.77	14.88	15.90	Median 10.50
S.D.	5.31	4.27	4.63	4.82	5.17	
Mean Reading Grade	7.50	7.90	6.90	6.95	7.45	4.75

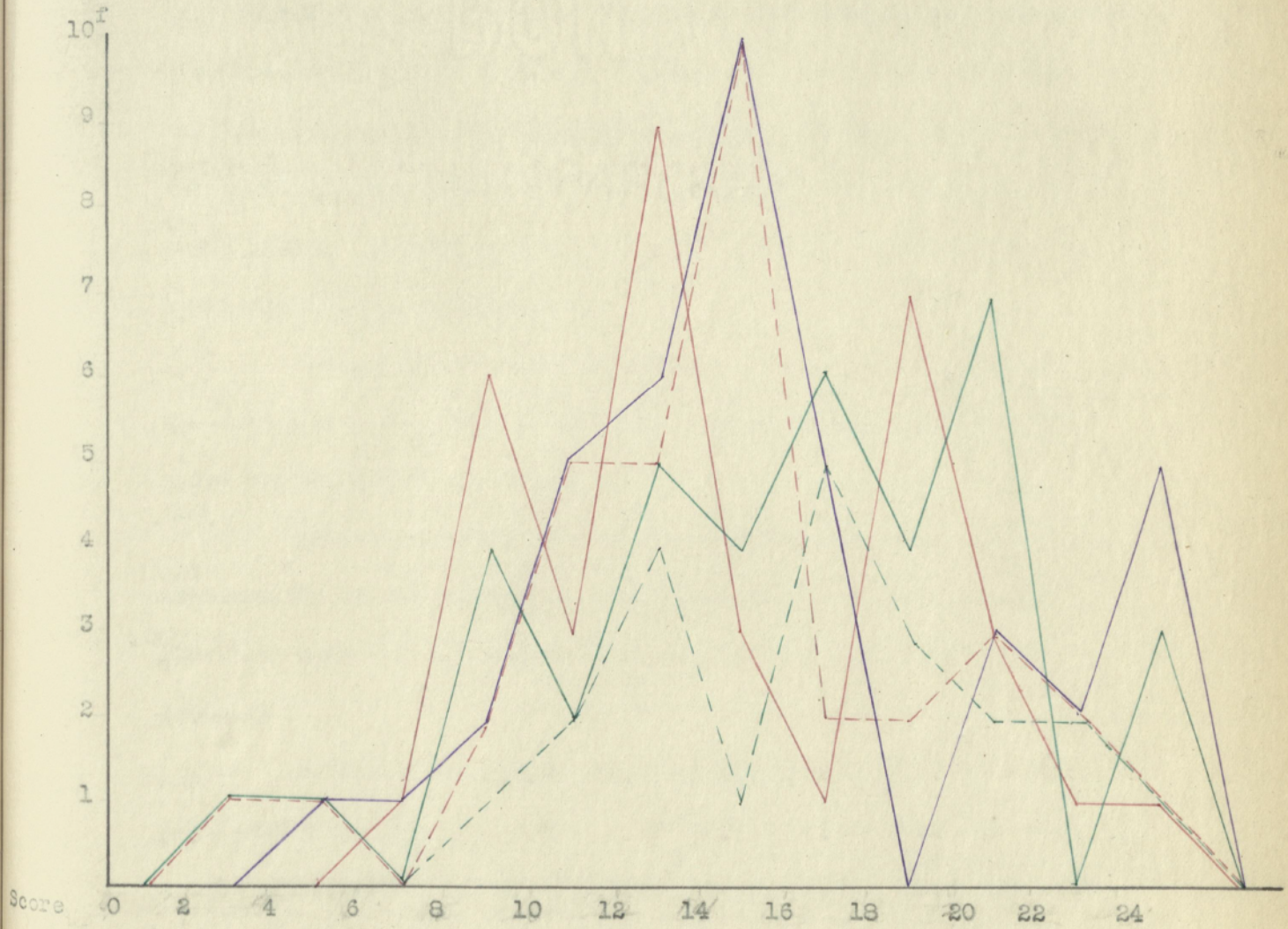

Figure X. Distribution of Scores of Elementary School Group on Gates Type B

	Mean	S.D.
School A	15.97	5.31
School B	18.81	4.27
School C	14.77	4.63
School D	14.88	4.82
School E	15.90	5.17

School A
School B
School C
School D
School E

Comparison of Elementary School Groups on Gates Type C, Reading to Understand Precise Directions

Table XVIII presents the arrangement of the scores of the five schools on achievement in Reading to Understand Precise Directions. School A again takes precedence over the others in mean score and mean reading grade. The comparatively small standard deviation marks the limits of the middle sixty-eight percent within a range of about eight points. Figure XI shows a piling up of the scores toward the upper end of this distribution.

School B and School C have standard deviations of almost the same size, but School B has a mean score of almost two points above the mean score of School C.

Schools C and D have mean scores of 14.77 and 14.47 with standard deviations of 4.30 and 5.83 respectively. These results show that School C has the greater scatter of scores of the two schools.

School E has the largest standard deviation of the five distributions. The mean score is greater, however, than the mean scores of Schools C and D. The mean reading grades range from 7.25 in School D to 8.58 in School A. Schools A and B are slightly below average in reading ability of this type; and Schools A, B, and E are average or above average in performance of this type. School F with a median score of nine has a reading of approximately 4.50.

TABLE XVIII

Scores of Elementary School Groups on Gates Silent Reading

Test - Type C

Elementary School	A	B	C	D	E	F
Scores	f	f	f	f	f	f
24-		1			2	
22-23	4	0	2		3	
20-21	10	4	2	3	3	
18-19	3	3	3	4	6	
16-17	5	6	10	5	3	1
14-15	6	0	2	7	7	0
12-13	2	3	6	5	6	2
10-11	6	2	4	6	3	0
8-9	1	2	4	2	6	1
6-7			2	2	1	1
4-5						0
2-3						2
Number of Cases	37	21	35	34	40	7
Mean	17.16	16.52	14.77	14.47	15.60	Median 9.00
S.D.	4.19	4.32	4.30	3.83	4.86	
Mean Reading Grade	8.58	8.25	7.40	7.25	7.80	4.50

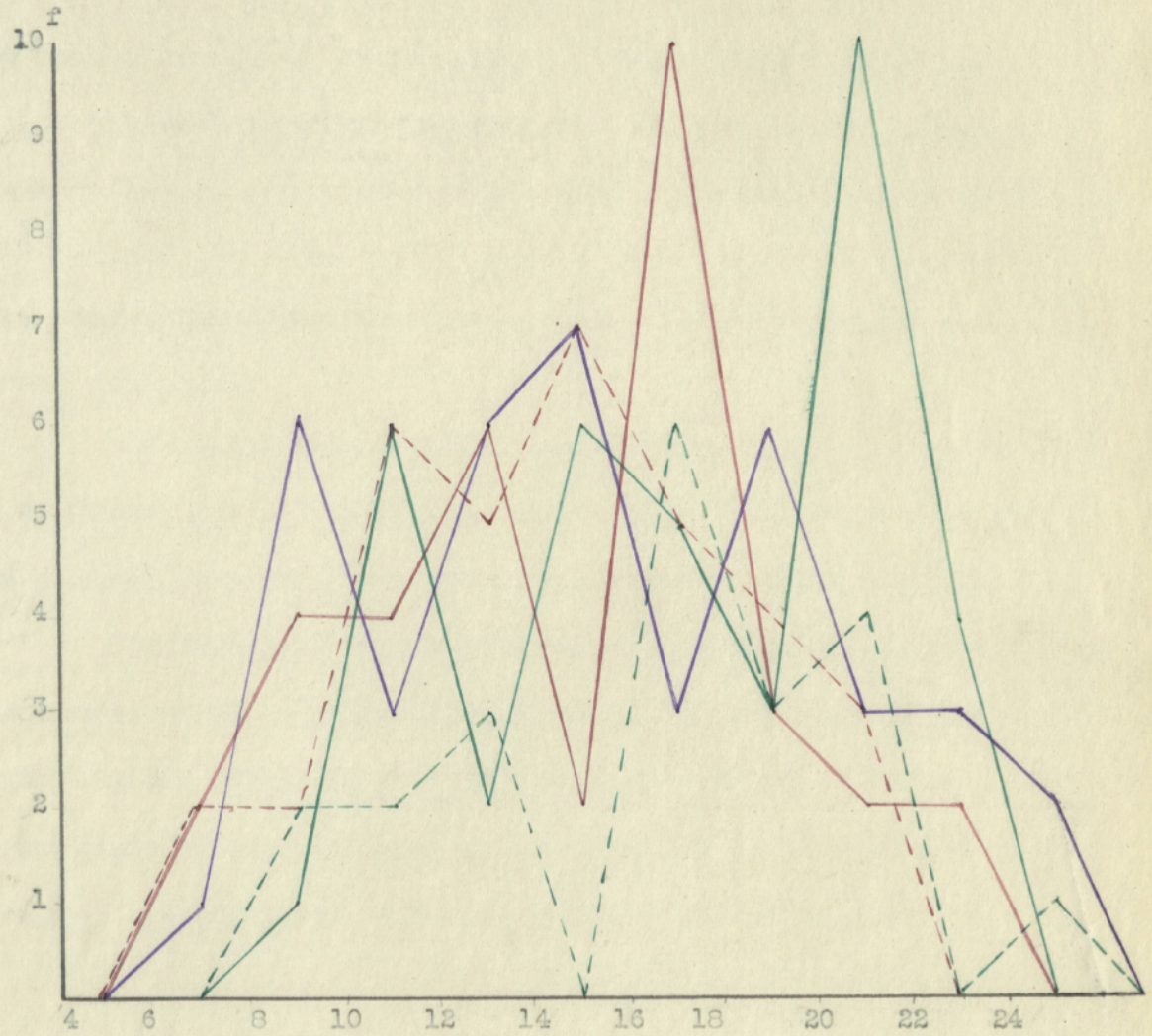

Figure XI. Distribution of Scores of Elementary School Groups on Gates Types C.

	Mean	S.D.
School A	17.16	4.19
School B	16.52	4.32
School C	14.77	4.30
School D	14.47	3.83
School E	15.60	4.86

Comparison of Elementary School Groups on Type D, Reading to Note Details

The data in Table XIX show that all of the schools are below average in performance on Gates Type D, Reading to Note Details.

School A, with a mean score of 38.15 and a mean reading grade of 7.46 is only a little below average in reading achievement of this type. The amount of dispersion is greater in this distribution than in any of the other four, revealing greater variability within this group.

The mean scores of the other four schools range from 34.59 to 36.00 with standard deviations ranging from 7.26 to 9.41. School F has a median score of 26.25, which is equal to a reading grade of 4.43

Figure XII presents graphically the arrangements of the frequencies of the different distributions. In this figure, most of the schools reach about the same height. School D reaches a higher point in one instance. School C has the shortest base-line, showing a narrower range of scores than the other schools.

TABLE XIX

Scores of Elementary School Groups on Gates Silent Reading Test

Type D

Elementary School	A	B	C	D	E	F	
Scores	f	f	f	f	f	f	
54-	1				2		
51-53	1				0		
48-50	5	2	2		3		
45-47	5	2	4	4	2		
42-44	3	2	3	1	3		
39-41	4	1	4	3	5		
36-38	6	1	4	10	6	1	
33-35	1	5	5	1	2	0	
30-32	3	4	3	5	5	0	
27-29	0	1	1	5	5	1	
24-26	4	1	5	3	4	2	
21-23	2	1	4	1	0	2	
18-20	0	1		0	3	1	
15-17	1			1			
12-14	1						
No. of Cases	37	21	35	34	40	7	
Mean	38.15	35.69	35.44	34.59	36.00	Median	26.25
S.D.	10.36	8.26	7.57	7.26	9.41		
Mean Reading Grade	7.46	6.48	6.38	6.00	6.60	4.43	

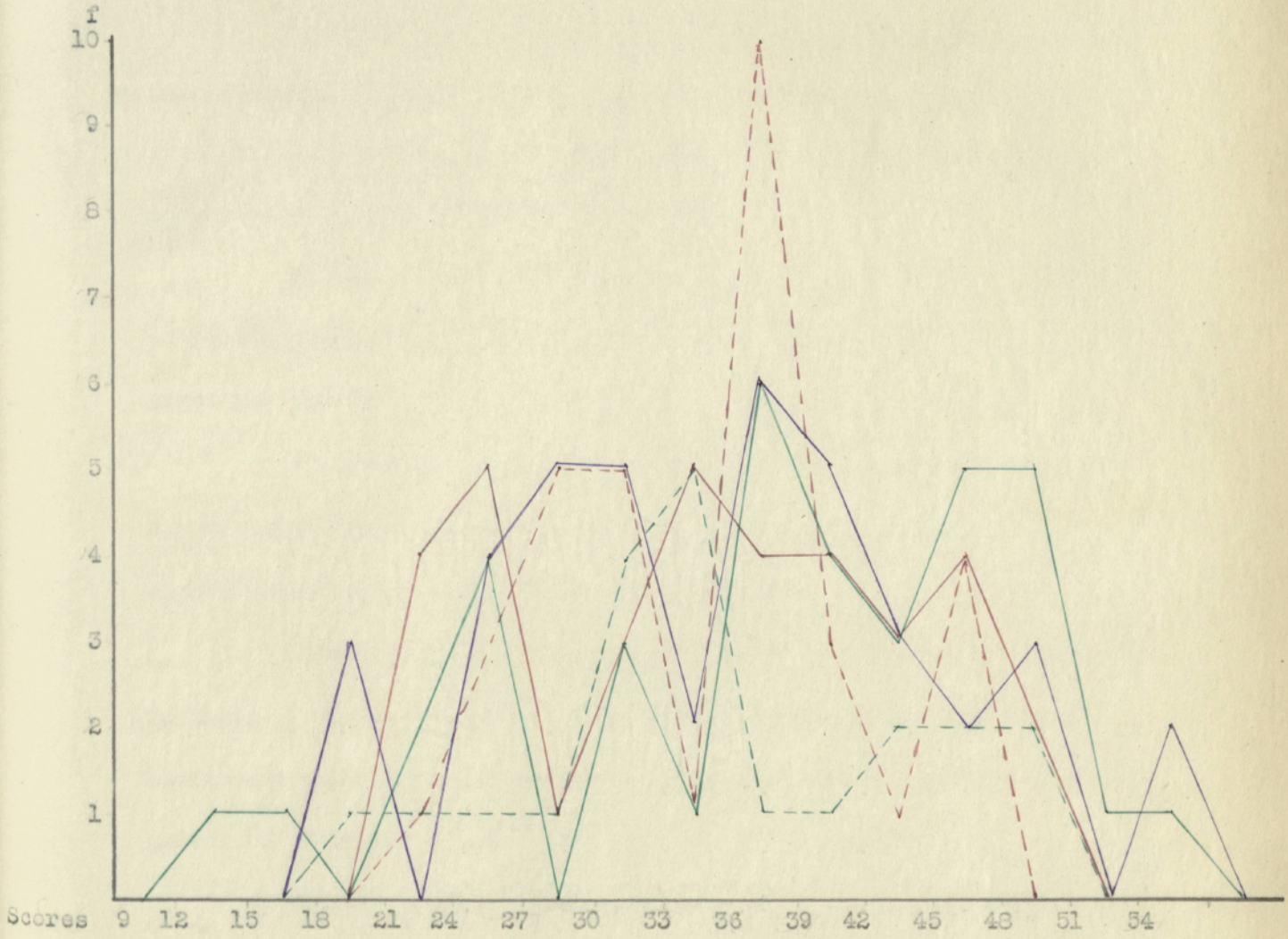

Figure XII. Distribution of Scores of Elementary School Groups on Gates Type D.

	Mean	S.D.
School A	38.15	10.36
School B	35.69	8.26
School C	35.44	7.57
School D	34.59	7.26
School E	36.00	9.41

School A ——
School B - - - -
School C ——
School D - - - -
School E ——

Comparison of Elementary School Groups on the Paragraph Meaning Test

Table XX gives the mean score, standard deviation, and mean reading grade for each of the five schools presented in graphical form in Figure XIII. It gives the median reading score and the approximate reading grade of School F, also.

On this measure of progress in reading, all of the schools excepting School F receive mean scores which rank them above their grade placement.

Figure XIII shows that all of the five distributions are skewed negatively. School E, especially, has a piling up of scores at the upper end of the distribution.

School A has the highest mean score and the highest standard deviation. The amount of standard deviation decreases as the mean scores decrease except in the case of School C which has the smallest amount of dispersion, but third from the highest mean score.

The mean reading grades for the five schools range from 7.82 in School B to 9.29 in School A. The median score of School F indicates a reading grade of 4.95.

TABLE XX

Scores of Elementary School Groups on the New Stanford Reading Test - Paragraph Meaning

Elementary School	A	B	C	D	E	F
Scores	f	f	f	f	f	f
120-124	2					
115-119	2		1			
110-114	3	1	2		4	
105-109	6	0	1	6	8	
100-104	7	2	6	3	7	
95-99	5	3	9	7	3	1
90-94	2	4	4	4	4	0
85-89	3	3	1	2	5	0
80-84	1	4	5	4	2	0
75-79	2	0	3	5	3	1
70-74	2	3	2	1	1	1
65-69	1	0	1	1	1	0
60-64	0	1		0	1	1
55-59	1			0	1	1
50-54				1		0
45-49						2
Number of Cases	37	21	35	34	40	7
Mean	97.91	88.21	93.07	90.88	94.63	Median 62.50
S.D.	15.26	12.70	12.06	13.21	14.27	
Mean Reading Grade	9.29	7;82	8.51	8.18	8.83	4.95

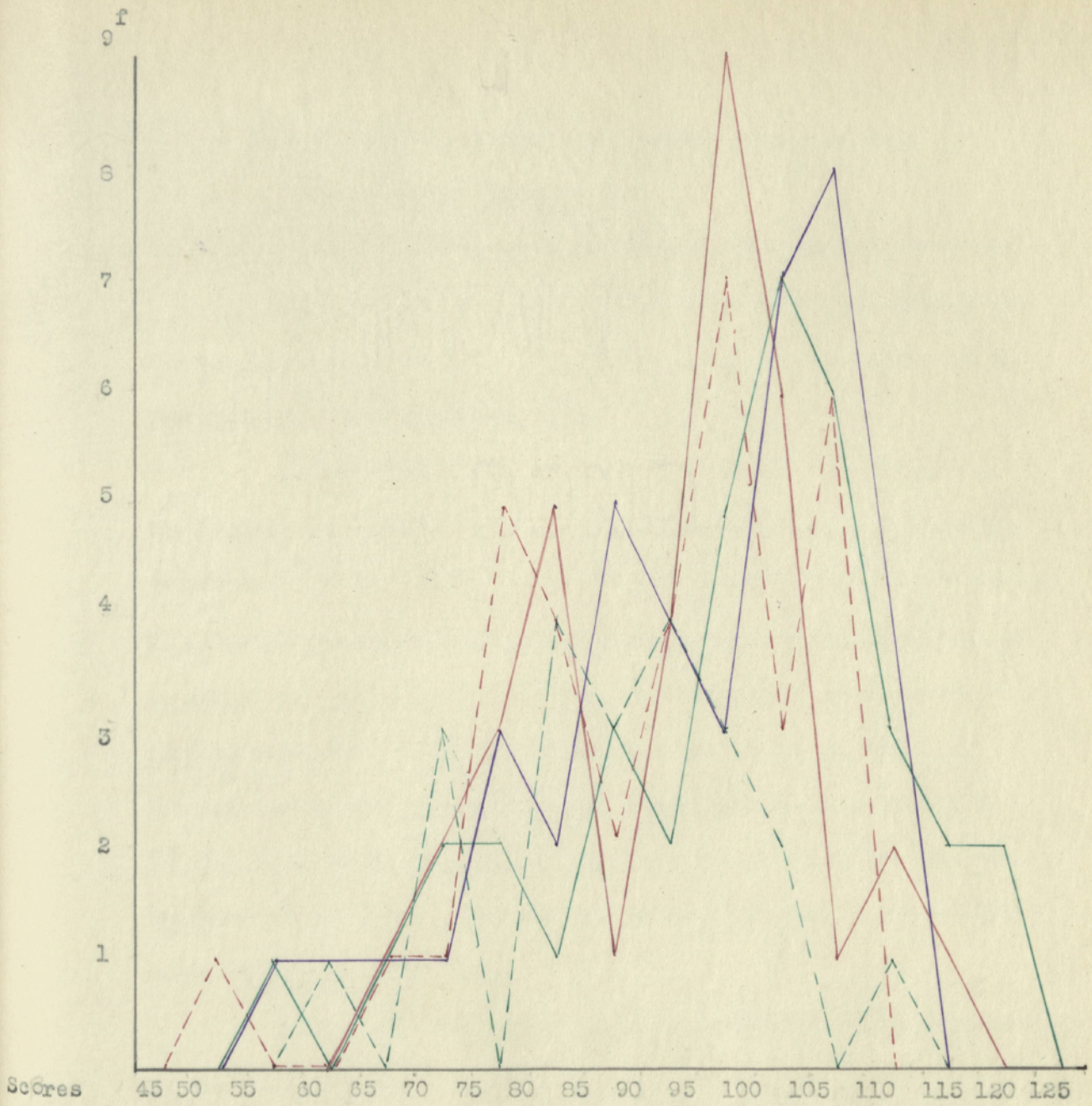

Figure XIII. Distribution of Scores of Elementary School Groups on the Stanford Paragraph Meaning Test

	Mean	S.D.
School A	97.91	15.26
School B	88.21	12.70
School C	93.07	12.06
School D	90.88	13.21
School E	94.63	14.27

School A ——
School B - - - -
School C ——
School D - - -
School E ——

Comparison of the Elementary School Groups on the Stanford Word Meaning Test

In Table XXI the Stanford Word Meaning Test is recorded.

School E has the least standard deviation and next to the highest mean score, which shows a close grouping of scores within comparatively narrow limits.

In School A again are found the highest mean score and the highest standard deviation. Schools A and E are above average in performance on this test. Schools B and C are slightly below average in achievement; School D is about a grade below average; and School F is almost two grades below average. The extremely great range of scores, from next to the last step interval to within two step intervals from the upper limits, in the School B distribution is indicative of great dispersion. In this set of distributions, as in the most of the others, the scatter is more noticeable in the lower parts of the distributions.

Figure XIV shows very irregular outlines of the performance of the five schools.

TABLE XXI

Scores of the Elementary School Groups on the New Stanford Reading Test - Word Meaning

Elementary Schools	A	B	C	D	E	F
Scores	f	f	f	f	f	f
110-114	2					
105-109	7	1	2	1	6	
100-104	6	1	5	2	4	1
95-99	3	2	1	3	6	0
90-94	3	5	5	3	2	1
85-89	2	2	5	5	6	0
80-84	7	3	4	4	4	1
75-79	1	1	3	4	4	0
70-74	2	2	3	7	5	1
65-69	1	1	4	2	2	0
60-64	3	2	1	2	1	0
55-59		1	2	0		2
50-54				0		0
45-49				0		0
40-44				1		0
35-39						0
30-34						1
Number of Cases	37	21	35	34	40	7
Mean	91.69	83.93	84.36	81.48	88.28	Median 72.50
S.D.	14.77	13.50	14.05	13.45	12.28	
Mean Reading Grade	8.34	7.20	7.27	6.90	7.83	5.85

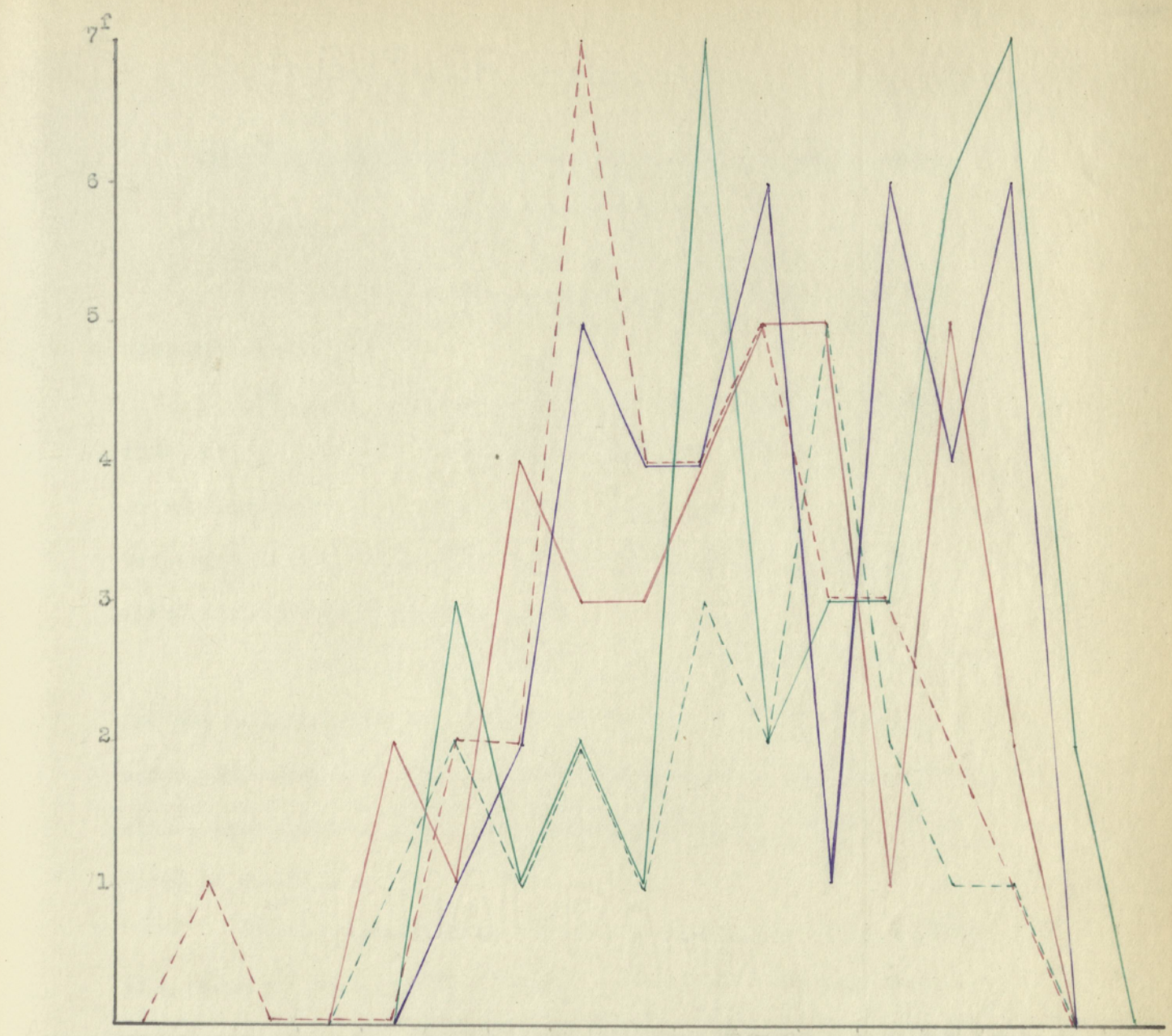

Figure XIV. Distribution of Scores of Elementary School Groups on the Stanford Word Meaning Test

	Mean	S.D.
School A	91.69	14.17
School B	83.93	3.50
School C	84.36	14.05
School D	81.48	13.45
School E	88.28	12.28

School A ——
School B - - -
School C ——
School D - - -
School E ——

Comparison of Elementary School Groups on the Chapman-Cook Speed of Reading Test

The data of the Chapman-Cook Speed of Reading Test are presented in Table XXII.

The mean scores range from 12.66 in School C to 13.67 in School B. There is a variation of a little more than a point in standard deviations of the groups. These measures of central tendency and variability indicate that the schools are very much alike in performance on this test.

In the norms given for this test, the median score for the seventh grade is 14.5 and the medium low seventh grade score score is 12.5. Thus all of the five schools excepting School D with a mean score of 12.18 rank between medium low and average in speed of reading.

Figure XV discloses a great overlapping of scores. There is a tendency for each distribution to take about the same general shape as every other distribution. Schools A, D, and E have base-lines which extend to greater limits than do the base-lines of Schools B and C.

TABLE XXII

Scores of the Elementary School Groups on Chapman-Cook Speed of Reading Test

Elementary School	A	B	C	D	E	F
Scores	f	f	f	f	f	f
24-25		1			1	
22-23		0			1	
20-21		0	1		1	
18-19	1	2	1	2	3	
16-17	3	2	3	2	3	
14-15	12	3	8	8	7	
12-13	6	6	7	7	11	1
10-11	9	3	7	5	7	2
8-9	3	3	4	6	2	2
6-7	2	1	4	2	3	1
4-5	1			1	0	1
2-3				1	1	
Number of Cases	37	21	35	34	40	7
Mean	12.78	13.67	12.66	12.18	13.60	Median 9.50
S.D.	3.08	4.09	3.43	3.70	4.32	

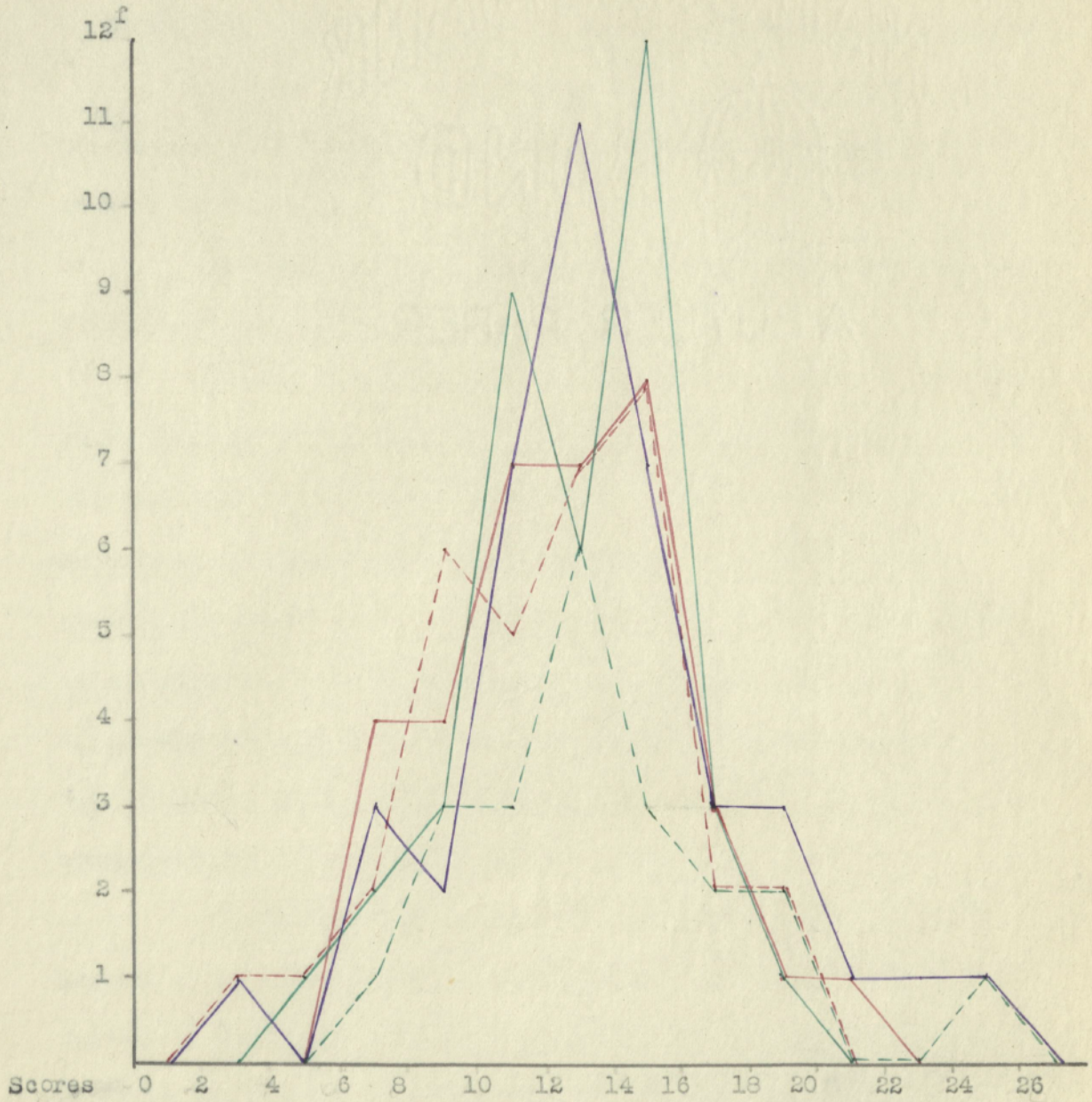

Table XV. Distribution of Scores of Elementary School Groups on the Chapman-Cook Speed of Reading Test

	Mean	S.D.
School A	12.78	3.08
School B	13.67	4.09
School C	12.66	3.43
School D	12.18	3.70
School E	13.60	4.32

School A
School B
School C
School D
School E

Comparison of Elementary School Groups on Composite Reading Scores

The combination of reading measures into composite scores should give a better measure of reading proficiency than any one measure taken alone.

Table XXIII gives the means and standard deviations of the five schools and the median score for School F.

As other test results would lead one to conclude, School A ranks the highest in this general measure of reading. School E, with the next highest mean score, has the largest standard deviation. The Schools B, C, and D have standard deviations of almost the same amount, but School B has the highest mean score of the three. There is a difference of about seventeen points between the mean scores of Schools D and A, the lowest and highest of the five schools on this measure. School F is very much below the other schools in this comparison, as it has been on all other measures.

Figure XVI shows the graphical picture of these results. Schools A, C, and E reach the same height, but School A is shifted farther to the right because of the grouping of scores nearer the upper end of the distribution. The crossing and re-crossing of lines of the different schools is an indication of the overlapping of these schools on this measure.

TAbLE XXIII

Composite Reading Scores of Elementary School Groups

Elementary School	A	B	C	D	E	F
Scores	f	f	f	f	f	f
190-199	1				1	
180-189	4	2		1	6	
170-179	4	1	4	0	4	
160-169	8	3	2	3	1	
150-159	3	1	8	6	0	
140-149	4	2	2	2	8	1
130-139	2	5	2	5	6	0
120-129	4	1	6	6	6	0
110-119	4	3	3	3	2	1
100-109	1	2	5	5	3	1
90-99	1	1	3	1	2	1
80-89	0			1	1	0
70-79	1			1		2
60-69						1
Number of Cases	37	21	35	34	40	7
Mean	148.71	139.76	135.29	131.47	142.75	Median 95.00
S.D.	28.41	25.93	25.60	25.07	29.19	

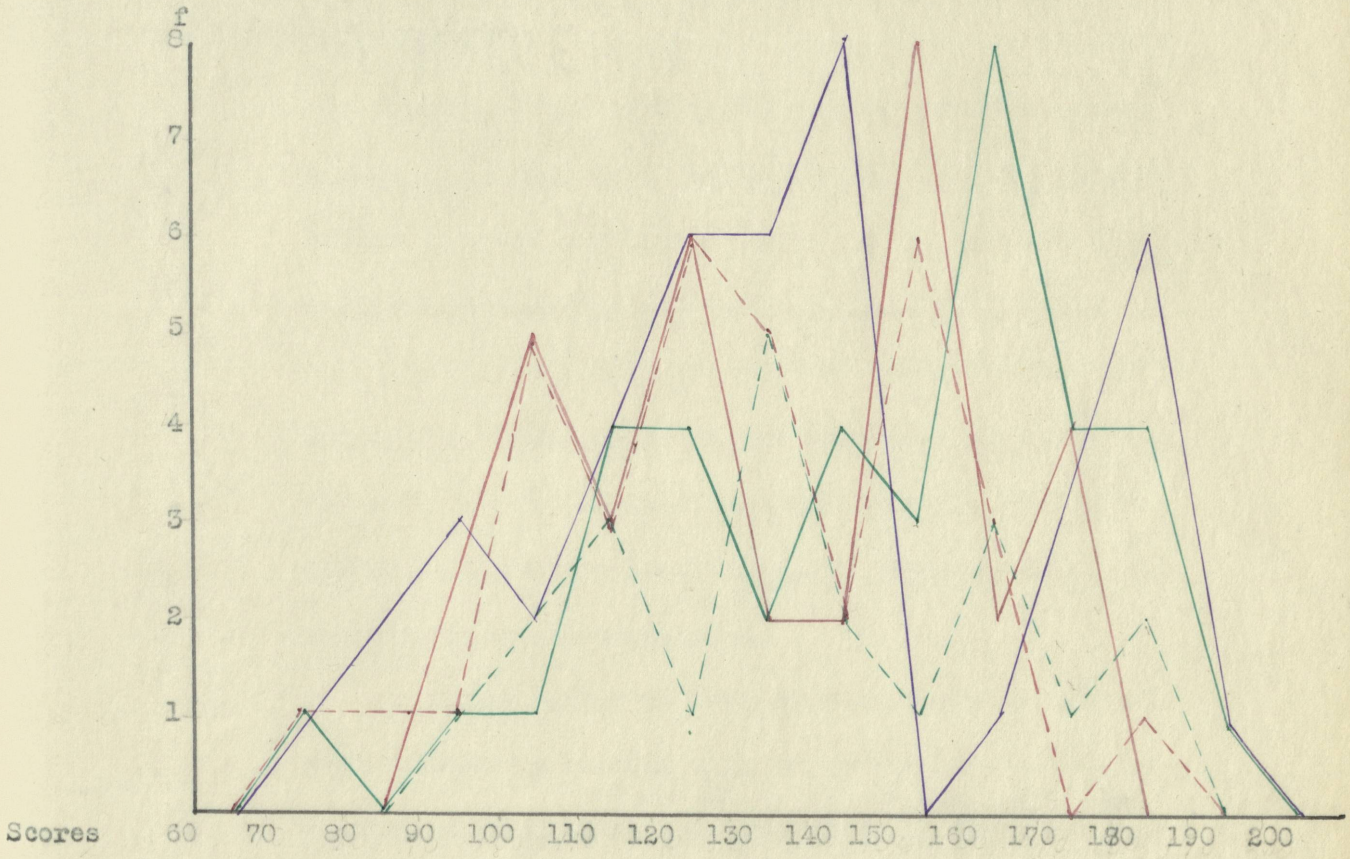

Figure XVI. Distribution of Composite Reading Scores of Elementary School Groups

	Mean	S.D.
School A	148.71	28.41
School B	139.76	25.93
School C	135.29	25.60
School D	131.47	25.07
School E	142.75	29.19

School A
School B
School C
School D
School E

Summary of the Comparisons of Elementary School Groups

The findings of this part of the study are summarized in the following statements:

1. Of all the schools represented in this study, School A has the lowest chronological age, the highest mental age, and the highest I.Q. It has also the greatest standard deviations in mental age and I.Q. Schools B, C, D, and E rank about the same on these measures, with School D a little below the others in mental age and I.Q. School F has the highest chronological age, the lowest mental age, and the lowest I.Q., as represented by the medians of its distributions.

2. School A has the highest mean score on all of the measures of reading with the exceptions of Chapman Cook Speed of Reading and Gates Type B. There is a shifting of the ranks of the other four schools with School D ranking lower in a few more measures. School F is the lowest in each comparison.

3. In practically all of the distributions the dispersion is of a greater degree in the lower limits, indicating more scattering of abilities among those who rank lowest.

4. Along with this summary a few general statements should be made regarding the districts which these schools represent.

School A is made up of pupils who come in most cases from the predominantly professional district. Many of the University instructors, professional business men, and other representatives of the higher occupational groups reside in this district. School E ranks second with respect to environment opportunities. This district also includes a great number belonging to the professional and commercial occupations. The environmental advantages are above those of the average school district.

School C probably ranks third in educational and social standing. Schools B and E have still less of the influence of better environmental elements. School F represents a negro population, and environmental opportunities are few in comparison with the other schools.

CHAPTER IV

INTERPRETATION OF DATA

The general interpretation of the findings of this study with respect to their significance and implications will be considered in this chapter.

The purpose of this study was to answer certain questions which have been stated in Chapter II.

First, What is the relation between reading ability and each of the three variables of chronological age, mental age, and I.Q.? The negative relationship existing between chronological ages and composite reading scores indicates that those who are retarded in grade placement with reference to chronological age are accelerated beyond the grade level which their mental ages warrant.

The high correlation between mental ages and composite reading scores, and I.Q. and composite reading scores show that reading ability is very dependent upon mental capacity. Reading of an inferior type is usually found in children of low I.Q., for to read understandingly one must weigh the different elements of each sentence and interpret them in relation to their content. All of this involves the elimination of irrelevant connotations and the accumulation of ideas which lead to the final generalization.

Most of the group mental tests utilize reading to such an extent that those who are deficient in reading are not measured as adequately as are those who have established more efficient habits of

reading. For this reason, mental tests requiring the use of reading are reading tests as well as intelligence tests. It is not surprising, then, that reading ability correlates so highly with I.Q. and mental age among children of approximately the same chronological age. Mental age and I.Q. are important factors in predicting achievement in reading and success in all school subjects.

A range of I.Q.'s from 70 to 145 precludes uniformity of progress in school subjects. Different types of instruction adapted to the varying abilities are necessary for the best results in achievement.

The next question involves the consideration of the different techniques of reading employed in studying the subject matter of the different courses. What types of reading are most essential to progress in the various school subjects? Recent investigations reveal that reading is not a uniform mental process to be developed by simply increasing the amount of reading to be done; proficiency in reading implies the development of many reading processes.

In the primary grades great stress is placed upon the mechanical phases of reading. Foundations are being laid upon which future training must be based. Near the close of the fourth year there is a shifting of emphasis from reading for the sake of learning the mechanics of reading to reading for definite purposes. The child begins to read arithmetic, language, and geography instead of just reading to master the process of reading. Reading is made a means to an end, not just an end in itself.

The correlations found between each of the four types of Gates Silent Reading Test and school subjects show that Reading for General Significance does not correlate as highly with school subjects as do the other three types, especially Reading to Understand Precise Directions and Reading to Note Details. These correlations suggest that pupils have not been given proper training in noting general significance, or that pupils of junior high school age have not the proper mental maturity to collect and relate the threads of a discussion into large general meanings, but instead they reproduce somewhat detailed and accurate statements of facts in about the same forms as they appear in the materials read.

Another probability is that the emphasis of our educational systems upon analytical reading tends to lead the pupil to believe that the recalling of detailed facts is the greatest measure of achievement. Intensive study of short assignments often leads to the development of such habits of reading.

The results of this study indicate that there is some discrepancy between educational theory and methods of instruction in current practice. For example, educators everywhere advocate that literature be studied for pure enjoyment and for large general views, yet correlations indicate that the results of Gates Type A, Reading for General Significance, are not as closely related to literature marks as are the results of the other three types of reading considered in this investigation.

A knowledge of the different reading processes essential to achievement in school subjects helps teachers to locate weaknesses of distinct types, and is of vital importance as an aid in adapting the technique of instruction to particular kinds of subject matter.

There are two general classifications of reading techniques known as oral and silent reading. What is the relation existing between oral and silent reading abilities? The high correlation of .88 $\pm$ .013, though somewhat superficial because of the selection of extreme groups, indicates a close relationship between oral and silent reading.

Oral reading difficulties are much more readily detected than are the difficulties of silent reading because of the greater objectivity of oral reading. Some difficulties common to both types can be located more easily through a diagnosis of oral reading ability.

In the primary grades reading means little more than the interpretation of the symbols of the printed page. As the child advances into higher grades the exigencies of his school subjects compel him to use silent reading as a means of more economical and effective study. The rapid increase in the amount of reading to be done makes oral reading for most purposes impracticable.

Scientific investigations within the last few years have revealed that there is a difference in the psychological nature of the two processes. One may master the mechanics of reading and still not be able to interpret what he reads. Silent reading emphasizes

meanings instead of the mechanical phases which are stressed in oral reading.

Oral reading is of supreme importance in the primary grades wherein habits of pronunciation and articulation are being formed. In the higher grades in certain kinds of literature, such as poetry, there are marked auditory values. There is less use for oral reading now than in times past, but there is still a need for it for the highest individual development.

The high correlation between oral and silent reading abilities implies that one can predict some of the difficulties encountered in silent reading through a study of the weaknesses revealed in a diagnosis of oral reading ability.

The fourth question raised in this study deals with influences upon reading ability which are effected outside of the school room. What relationship exists between certain environmental factors and achievement in reading? The findings of this study reveal that the two groups composed of those who ranked in the highest quartiles and those who ranked in the lowest quartiles on the different reading measures were found to take the same general arrangement with respect to environmental conditions. A knowledge of the home conditions of pupils is of great value to teachers in helping them to find a starting point for each child which will best fit his needs.

Some pupils come from homes where reading has been the most important activity. Their reading interests and attitudes have been developed through adequate provision of various types of reading

materials. They have had wide experiences gained through travel, entertainment, and other forms of pre-reading experiences. They have attitudes and desires which prompt further learning.

Others, who are less fortunate, have never had the privileges and advantages which help to privide a taste for and an interest in reading. They do not have the background, built up through experience, upon which excellency in reading depends. Their reading has been very meager, hence their command of the reading processes is not sufficiently developed to permit them to keep pace with their more fortunate class mates. All of these factors are significant to the classroom teacher who has to base instruction upon the degrees of readiness to which the different pupils have attained.

The more fortunate pupils comprising the High Group have not only higher mental capacities, but also more environmental advantages than the Low Group, therefore the differences in achievement would not be so great if home conditions were more nearly the same for all.

The fifth question is closely related to the one just discussed. Are there any differences in the reading abilities of the six elementary school groups? The fact that one school ranked highest on almost every measure of reading, and another ranked lowest on every measure is evidence that there is something more than chance entering into this arrangement. The differences in social backgrounds, which corresponds very closely to differences in intelligence, probably accounts for many of the differences found among these school groups.

The various interests and activities of different localities and communities have an influence on the amount and types of materials

which children read. The mingling of these different groups into one school population complicates the teaching problem with respect to elementary school training, social backgrounds, and range of abilities.

The sixth question deals with reading attainment of the entire seventh grade. What is the approximate reading proficiency of the seventh grade as measured by a battery of tests? The averaging of the reading grade levels of all of the test results gives a mean reading grade level of 7.18. The averaging of the different measures probably does not give a true measure of reading proficiency, as some tests include more types of reading than others and should have more weight accordingly. The results of the single tests are important, however, in measuring attainment on the different measures and in detecting deficiencies. The approximate mean reading grade levels range from 6.00 to 8.43, while the distributions of the different tests show scores ranging from below third grade level to and above the eleventh grade level.

The whole psychological process known as silent reading is composed of the ability to read with understanding and the ability to read at different rates of speed the various types of reading materials. The pupils of the seventh grade are almost up to average in comprehension, but they are more than a grade below average in speed of reading. The problem of speed of reading has not yet become a matter of great concern in the minds of most grade school teachers; especially is this true in the elementary grades where all effort is directed toward the mechanics of reading.

What is the significance of this range of reading proficiency to the classroom teacher? Courses of study are usually outlined for pupils of average ability; for those who rank between the best and the poorest in any given subject. Test results indicate that there are extreme cases for which adequate provision is not made. Methods of instruction for these extreme cases will necessitate the use of reading materials of the different grade levels to meet individual needs.

W.S. Gray states that pupils who rank below the sixth grade norm in reading are seriously handicapped in studying the reading materials prescribed in junior and senior high schools.[1]

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1. W.S. Gray, "Reading Deficiencies in Secondary Schools" Journal of the National Educational Association. Vol. 20, June, 1931, p. 197.

CHAPTER V

SUMMARY OF FINDINGS

The statistical findings of this investigation are summarized in the following statements:

1. The mean chronological age of the group studied was 13 2/12 years; the mean mental age was 13 9/12 years; and the mean I.Q. was 106.

2. The approximate mean reading grade levels attained by the group are as follows: Gates Type A, 6.73;, Gates Type B, 7.18, Gates Type C, 7.68, Gates Type D, 6.48, Stanford Test of Paragraph Meaning, 7.47, and Chapman-Cook Speed of Reading, 6.00.

3. A coefficient of correlation of $-.47 \pm .030$ expresses the relationship between the composite reading measure and C.A. Correlations of $.77 \pm .020$ and $.75 \pm .020$ were found between composite reading scores and M.A. and I.Q. respectively.

4. Correlations between composite reading scores and marks in the various school subjects ranted from $.38 \pm .040$ to $.56 \pm .032$.

5. In the correlations computed between the different types of reading and the school subjects, the range was from $.19 \pm .045$ to $.58 \pm .031$.

6. The coefficient of correlation of .64 ± .028 was found between Chapman-Cook Speed of Reading Test and the Stanford Paragraph Meaning Test. A correlation of seventh grade average marks with results of Chapman-Cook Speed of Reading Test resulted in a relationship of .36 ± .040.

7. The correlation between Paragraph Meaning and seventh grade marks was .58 ± .031; the correlation between Word Meaning and seventh grade average marks was .48 ± .036.

8. High and Low Groups selected on the three bases of M.A., seventh grade average marks, and the different reading scores, showed completely reliable differences on all of the measures on which they were compared.

9. The personal interview data of the groups designated as High and Low on the basis of reading measures, indicate that those in the High Group had a more favorable background for educational achievement with respect to every situation studied.

10. In the comparison of the different elementary school groups School A with only two exceptions scored the highest on all of the reading measures. School F ranked lowest in each comparison. There was much interchanging of rank positions among the other four schools; School D ranked lowest of the four on several measures.

Conclusion

Reading tests do not measure reading attainment perfectly, but until more adequate means of measurement are available, they should be used to the best advantage possible.

Deficiencies in reading often present a series of difficulties, affecting achievement in different lines. Those specific elements that are basic in reading are also the underlying foundation for scholastic attainment in all other school subjects. The teaching of science, mathematics, English, or any other school subjects involves the teaching of reading either incidentally or specifically, thus the teaching of reading is in reality a means of effectively training pupils to study different types of materials.

It has been stated that the reading processes used vary with the purpose for which one reads and the type of reading material. The very fact that no two individuals are alike necessitates the provision of different types of reading to satisfy constantly changing interests.

Gates says, "It is folly to expect to learn functions as complex as reading economically and effectively without instruction, and it is equally futile to attempt adequate methods of instruction without intimate knowledge of these functions and the influence of a variety of factors upon them."[1]

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1. A.I. Gates, "The Psychology of Reading and Spelling With Special Reference to Disability." Teachers College Contributions (1922) p. 106.

Reflection will reveal that almost every subject in the curriculum involves the use of different reading processes. Those who have formed adequate reading habits at an early age have an advantage over incompetent readers. It follows that those who have the capacity should be given assistance in learning to read

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APPENDIX

Published by the
Public School Publishing Co.
Bloomington, Illinois
Printed in U. S. A.

STANDARDIZED ORAL READING PARAGRAPHS

By William S. Gray

Name.....Age Today..... Years Month

Race.....Sex.....Grade.....

City.....State.....Date.....

School.....Teacher.....

Directions to the Teacher

Each child should be tested apart from the others in a room by himself. Give him an unused folder. Take another folder and fill in the above blanks before beginning the reading. As the child reads, record his efforts, using the marks presented on the class record sheet, and following the directions printed there as accurately as possible.

1

A boy had a dog.
The dog ran into the woods.
The boy ran after the dog.
He wanted the dog to go home.
But the dog would not go home.
The little boy said,
"I cannot go home without my dog."
Then the boy began to cry.

2

Once there was a little pig.
He lived with his mother in a pen.
One day he saw his four feet.
"Mother," he said, "what can I do with my feet?"
His mother said, "You can run with them."
So the little pig ran round and round the pen.

3

Once there was a cat and a mouse. They lived in the same house. The cat bit off the mouse's tail. "Pray puss," said the mouse, "give me my long tail again."
"No," said the cat, "I will not give you your tail till you bring me some milk."

4

Once there lived a king and a queen in a large palace. But the king and queen were not happy. There were no little children in the house or garden. One day they found a poor little boy and girl at their door. They took them into the beautiful palace and made them their own. The king and queen were then happy.

5

One of the most interesting birds which ever lived in my bird-room was a blue-jay named Jackie. He was full of business from morning till night, scarcely ever still. He had been stolen from a nest long before he could fly, and he had been reared in a house long before he had been given to me as a pet.

6

The part of farming enjoyed most by a boy is the making of maple sugar. It is better than blackberrying and almost as good as fishing. One reason why a boy likes this work is that someone else does most of it. It is a sort of work in which he can appear to be very industrious and yet do but little.

7

It was one of those wonderful evenings such as are found only in this magnificent region. The sun had sunk behind the mountains, but it was still light. The pretty twilight glow embraced a third of the sky, and against its brilliancy stood the dull white masses of the mountains in evident contrast.

8

The crown and glory of a useful life is character. It is the noblest possession of man. It forms a rank in itself, an estate in the general good will, dignifying every station and exalting every position in society. It exercises a greater power than wealth, and is a valuable means of securing honor.

9

He was approximately six feet tall and his body was well proportioned. His complexion inclined to be florid; his eyes were blue and remarkably far apart. A profusion of hair covered the forehead. He was scrupulously neat in his appearance; and, although he habitually left his tent early, he was well dressed.

10

Responding to the impulse of habit Josephus spoke as of old. The others listened attentively but in grim and contemptuous silence. He spoke at length, continuously, persistently, and ingratiatingly. Finally exhausted through loss of strength he hesitated. As always happens in such exigencies he was lost.

11

The attractions of the American prairies as well as of the alluvial deposits of Egypt have been overcome by the azure skies of Italy and the antiquities of Roman architecture. My delight in the antique and my fondness for architectural and archaeological studies verges onto a fanaticism.

12

The hypotheses concerning physical phenomena formulated by the early philosophers proved to be inconsistent and in general not universally applicable. Before relatively accurate principles could be established, physicists, mathematicians, and statisticians had to combine forces and work arduously.

GATES SILENT READING TEST

Type A. Reading to Appreciate the General Significance

Grades 3–8 **FORM 2**

Write your name here.....

How old are you?.....When is your birthday? .....

School.....Grade.....Date.....

This is to be a reading test. You are to read a number of paragraphs. Below each paragraph are five words. One of the words tells how some one described in the paragraph felt—whether sad or happy, etc. You should draw a line under that one—and only one—word to show that you understand just how the person described in the paragraph did feel. Now let us try a sample before we begin the real test. Read the following paragraph and then draw a line under the word which you think tells best how the person felt.

> Once upon a time a young fairy went down to the river to swim. She jumped in with a splash. She put out her hands and tried hard to swim. Something seemed to be dragging her down. Oh, it was her wings! She had forgotten to take them off. Fairy wings become heavy when they are wet. She cried for help as loudly as she could.
>
> Draw a line under the word which tells how the fairy felt.
>
> cross angry weary afraid joyful

On the following pages are more paragraphs just like this one. When the signal "Begin" is given you should turn the page, read the first paragraph and underline the word which tells best how the person felt, just as you did above. When you finish the first go on with the second and so on until the signal "Stop" is given. The purpose of the test is to see how many paragraphs you can read and mark correctly in a short time. Don't waste any time. Don't look at anyone's paper.

Do Not Turn the Page Until You Are Told to Begin

To the Examiner. 1. See that each child has a pencil. 2. Distribute the papers. 3. Have the children fill in the blanks on this page. 4. Read the directions aloud. After the pupils have tried the test paragraph on this page tell them how you would do it. Explain the directions with great care and make clear the reason why one answer is best. In grades 3 and 4 repeat the directions and explanations. 5. Show the children the order of the paragraphs on all three pages by holding up a copy of the test. Ask them to read in this order. 6. This front page should be up when the signal "Begin" is given. **7. Say "Stop" at the end of exactly six minutes.** 8. Collect papers immediately. 9. Score according to directions given in the folder of directions.

BUREAU OF PUBLICATIONS
Teachers College, Columbia University
NEW YORK CITY

1. The children waited on the dock. The big ship was coming up the river. Its flag was flying in the wind. Slowly it came nearer and nearer. Now the children could see the people on the decks. They tried hard to see if they could find their father. Suddenly they saw him on the deck. They waved their hands to him and he waved back.

Draw a line under the word that best tells how the children felt.

sad afraid angry joyful worried

2. It was hard for Baby Betty to be good all day. She had had her nap and a big noise had wakened her. Now it was supper-time and she was still crying a bit. Her dish of spinach was given to her, but she would not eat it. Her mother started to feed her with a spoon. Both fat little hands took hold of the spoon and threw it to the ground!

Draw a line under the word which best tells how Baby Betty felt after her nap.

excited joyful cross afraid happy

3. The little kitten was so cold! The wind blew around him and the snow fell on him. Suddenly the kitten heard a thud, thud along the street. A market boy was going by with a basket on his arm. He saw the cold little kitten. He picked him up and put him in his market basket. Soon the kitten was in a nice warm store. He purred loudly.

Draw a line under the word that best tells about how the little kitten felt in the store.

angry sad afraid happy cross

4. The little boy sat on a fence beside the meadow. He looked down at the cows, and then over at the river. How he wished he had some one to play with! He looked back at the house behind him. It was quiet as could be. Only grown-ups were there and most of them were asleep. He got down and walked slowly across the meadow.

Draw a line under the word which best tells how the little boy felt.

afraid gay worried weary lonesome

5. Tom and Betty had been walking a long way. It was hot, and they were tired. Suddenly they came to an old house. In the front yard were two trees that made a lovely cool shade. Betty saw an old woman in the doorway. She asked timidly, "Please, may we rest under your trees?" "No," replied the old woman. "If you do, I'll set my dog on you!"

Draw a line under the word that best tells what kind of old woman Betty saw.

playful joyful homesick cross happy

6. The Sunday School picnic was almost ready to start. The children eagerly packed the lunch boxes in one corner of the wagon. Then the children piled in. They were all laughing and talking at once. Nobody wanted to sit down. They were all hopping up and down. Soon things were ready. The driver clucked to his horses and away they went!

Draw a line under the word which best tells how the children felt.

afraid angry excited weary lonesome

7. The feathered folk in the henhouse seemed cross and fretful. It is no wonder they felt that way, for they had had nothing to eat or drink since early in the morning. The fine-looking white rooster, however, seemed as happy as usual. That is saying a great deal. A jollier old fellow than he never lived in a farmyard.

Draw a line under the word which best tells how the rooster felt.

hopeful sad joyful anxious afraid

8. Tom had a little puppy given him for his birthday. The puppy was very hungry so Tom made ready a meal for him. While the puppy was eating, a large dog suddenly ran up and carried off the dinner, pan and all. Tom ran after the dog as fast as he could. Soon he caught him and took away the dinner. Then Tom gave him a good whipping.

Draw a line under the word that best tells how Tom felt.

angry lonesome joyful homesick happy

9. Betty loved her canary very much. He always sang when she came near and would eat sugar from her lips. Now he was sitting on his perch with his head on one side. When Betty came near he did not even raise his head. She put sugar on her lips, but he would not go near it. Betty did not know what to do. If only she could help him!

Draw a line under the word which best tells how Betty felt.

angry joyful worried homesick happy

10. It was the day after the children had left the country. All summer long they had romped and played with Rex out in the green meadows. Rex loved to play with the children and would bark excitedly at all their fun. Now he was lying in front of the empty doorway, with his head on his paws, waiting for the children to play with him.

Draw a line under the word that best tells how Rex feels.

afraid lonesome playful happy excited

11. The children had had a little red and white goldfish. They had fed him every day with his little white crackers. They had changed the water in his bowl, too, and were careful to see that he had plenty of green things. Now he was dead. The children stood around the bowl and the youngest one was crying.

Draw a line under the word that best tells how the children felt.

excited homesick sad playful happy

12. The Third Grade was going to have a puppet show. Two boys had been getting it ready for a week. All during the morning the children whispered to each other. They could hardly wait for the time to come when they would see the wonderful puppet show. Now it was almost time for it and the children could not keep still.

Draw a line under the word that tells how the children felt.

afraid sad cross excited unhappy

13. Betty had gone shopping with mother for a whole morning. She had looked and looked at all the pretty things until her eyes ached. Then her feet began to drag behind her. She found that she could hardly lift them from the floor. She saw a nice soft chair over in one corner. Stumbling over to it, she sank down with a deep sigh.

Draw a line under the word which best tells how Betty felt.

afraid joyful weary naughty playful

14. It was the first warm day of spring. All the children were out on the lawn. They were laughing and running all over, trying to find signs of spring. Suddenly Betty found the first crocus. "Oh, the crocuses are up! The crocuses are up!" they all shouted and began to dance in little whirling circles all over the lawn.

Draw a line under the word which best tells how the children felt.

lonesome cross weary joyful afraid

15. Ruth stood in front of the big Sunday School Christmas tree. Everybody else was getting presents. They were showing them to their friends and laughing and talking. Suddenly she felt some one press something in her arms. Ruth looked down and there was a beautiful doll with gold curls. She hugged it tightly to her and smiled at everyone.

Draw a line under the word that best tells how Ruth felt after she got the doll.

afraid sad happy homesick worried

16. The little country boy had been brought to the city. He had been shown the high buildings. He had ridden in the subways and had seen bright electric signs at night. But after three days he began to grow weary of the sights of the city. He longed to go back to the country. "Oh, how I wish I could see a little running brook!" he sighed.

Draw a line under the word which best tells how the country boy felt.

angry afraid homesick happy playful

17. Jim could hardly believe his eyes. There was a little puppy before him, and his father said it was his very own. The puppy was jumping up and down, rolling his eyes at Jim. Jim could wait no longer. Away they ran! The little dog leaped on ahead toward the woods. Now and then he would run back and bite at Jim's heels in fun.

Draw a line under the word that best tells how the puppy felt.

afraid sad cross weary playful

18. The whole house was hushed. The children had to go around on their tiptoes, for Baby Mary was very sick. They stood in one corner and watched a nurse with a big white cap go in and out of the sick-room. The children waited for the doctor to come out. "Oh, tell us," they asked, "is Baby Mary going to get well soon?"

Draw a line under the word which best tells how the children felt.

homesick worried angry naughty happy

19. Tom and Mary were going to sell lemonade to people who passed in automobiles. Mary rushed into the house to get the lemons and glasses from mother. Tom ran over to the pump to get some cold water. They both worked fast until all was ready. They could hardly wait for the first car to stop and buy their "Ice Cold Lemonade."

Draw a line under the word that best tells how Tom and Mary felt.

sad angry excited weary afraid

20. Jack stood still. By a tree near him was the biggest bear he had ever seen. Suddenly the bear turned around. Two fuzzy little cubs were behind her. They were fighting and rolling around in the dirt. The big bear gave them each a hit with her paw. Jack did not see any more, for he turned and ran down the hill as fast as he could.

Draw a line under the word that best tells how Jack felt.

angry playful happy weary afraid

21. Ben was a city boy who had never been to the country. He had lived all of his short life in city streets. One summer some friends took him to the country. He was shown the animals, the meadows, and the woods. He looked at them all in silence. Suddenly he looked up with tears in his eyes and asked, "But where are the streets to play in?"

Draw a line under the word which best tells how Ben felt.

excited homesick happy joyful weary

22. Buddy went down the meadow to see Merry-Legs. Merry-Legs was a young pony. He was no bigger than a big dog. Buddy held out a lump of sugar. Merry-Legs came running up to Buddy. He jumped up and put his front hoofs on Buddy's shoulders and ate the sugar. Then he jumped down and rolled over and over in the grass.

Draw a line under the word which best tells how Merry-Legs felt.

angry playful sad afraid cross

23. The children dug in the sand a while. Suddenly one of them said, "Oh, let's make a tunnel!" Down they went on their hands and knees and began to dig in the sand near the water's edge. Soon they had two holes which almost met. "Now for the last bit," they shouted. Soon the tunnel was made. They sat back and laughed with joy.

Draw a line under the word which best tells how the children felt.

sad afraid angry happy cross

24. The old woman walked along the road toward her home. She had had a hard day out in the fields. The sun had been very hot and she had become tired. On her way home she had gathered wood for her fire. She carried it in a big bundle on top of her head. She walked along very slowly, feeling as if she could hardly take another step.

Draw a line under the word which best tells how the old woman felt.

joyful weary happy playful excited

GATES SILENT READING TEST

Type B. Reading to Predict the Outcome of Given Events

Grades 3–8 **FORM 2**

Write your name here.....

How old are you?..... When is your birthday? .....

School..... Grade..... Date.....

This is to be a reading test. You are to read a number of paragraphs. Below each paragraph are four sentences. Each sentence tells what is most likely to follow after the happenings that are described in the paragraph. You should draw a line under one—and only one—of these sentences to show that you can tell what will probably happen next. Now, let us try a sample before we begin the real test. Read this paragraph and then draw a line under the one sentence which you think tells what will happen next.

> The grocery man had a black cat. He loved his cat very much. One day a lady brought a big bulldog into the store. The grocer's cat raised his back and said "Meow! Psst!" to the bulldog. Of course, the dog did not like that, so he growled loudly. Before the grocery man or the lady knew what was happening, the bulldog had sprung upon the cat.
>
> They let the fight go on
> The cat slept on
> The lady took her bird away
> The grocery man saved his cat

On the following pages are more paragraphs just like this one. When the signal "Begin" is given you should turn the page, read the first paragraph and underline the sentence which tells best what is coming next, just as you did above. When you finish the first go on with the second and so on until the signal "Stop" is given. The purpose of this test is to see how many paragraphs you can read and mark correctly in a short time. Don't waste any time. Don't look at anyone's paper.

Do Not Turn the Page Until You Are Told to Begin

To the Examiner. 1. See that each child has a pencil. 2. Distribute the papers. 3. Have children fill in the blanks on this page. 4. Read the directions aloud. After the pupils have tried the test paragraph on this page tell them how you would do it. Explain the directions with great care, stressing the fact that they are to mark the line which tells what is most likely to happen next. Give reasons why the line you marked in the sample tells what is most likely to happen next. In grades 3 and 4 repeat all directions and explanations. 5. Show the children the order of the paragraphs on all three pages by holding up a copy of the test. Ask them to read in this order 6. This front page should be up when the signal "Begin" is given. 7. **Say "Stop" at the end of exactly eight minutes.** 8. Collect papers immediately. 9. Score according to directions given in the folder of directions.

BUREAU OF PUBLICATIONS
Teachers College, Columbia University
NEW YORK CITY

1. Two little girls wanted to play that they were at sea. They put a table upside down and tied white towels from leg to leg. They put a flag on one leg and a small lantern on another. Pillows were their life savers, a small shovel on a cord their anchor. The two little sailors grew hungry. Their mother called, "Ship ahoy! Cherry Pie Port over here!"

The girls stayed in the table ship all day
The girls went to sleep in their ship
The table was next made into a playhouse
The girls jumped out and ran to lunch

2. Once a boy found three tiny wild rabbits. He took them home and built a nice large cage for them. Every day he fed them lettuce and apples. But they never became tame. When they saw him coming they would run about the cage and hit their heads on its sides. The boy was sorry for them, for they belonged in the woods.

He made a smaller and stronger cage
He gave them dry grass instead of lettuce
He took them to the woods and let them go
He took them to the woods and shot them

3. Johnny and Polly brought the picnic basket across the sand. The waves were calmly splashing against the shore. Away out on the ocean they could see the smoke from a few steamships. "Oh Johnny," said Polly, "let's go swimming after lunch." "All right," said Johnny, as he took out the sandwiches and piled them high on some white napkins.

They danced in the moonlight
They ate their lunch
They went home
They dried themselves in the sun

4. Tom wanted to plant a bed of onions. He bought the little onion sets at a store. He planted them just under the top of the soil. Two days later he proudly took his father to see the onion bed. But how queer the bed looked! All the onions stood up on their white roots as boys stand on stilts. Tom laughed and planted them deeper.

Tom never looked at the onion bed again
The onions were boiled and eaten for dinner
Tom's garden was full of beautiful flowers
The onions grew as they should

5. A small girl used to look at a green bottle in a store window. It was a slim misty green bottle with bright stars upon it. Every day the girl looked at it. On hot days she thought how cool it would be to the touch. One day as she was looking at it a kind lady asked her if she wanted it. The little girl said she wanted it very much.

The little girl ran away from the lady
The lady bought the green bottle for her
The lady said, "Well, you can't have it"
The lady gave the little girl a beautiful doll

6. A little girl wanted a toy city but she had no little houses. On a flat sunny lot she built a tin can city. The lids of the cans she bent to look like porch roofs. The cans she put on their sides in rows like houses on streets. Every day she added streets to Tin Can City. But one day a man came to clean up the vacant lot.

The man put new windows in all the houses
He sat on the porches of the houses
He bought several cans of beans
The man took all the cans away

7. Jenny had no dolls. But there were tall pink and red hollyhocks in the garden. She made twenty lovely dolls. She used the opened flowers for dresses, and the tight buds for heads. She put sweet pea bonnets on her flower dolls. Jenny grew tired and went to a shady place to sleep. She left the poor hollyhock ladies in the hot sunshine.

The flower dolls kept fresh in the shade
The hollyhock ladies went to the store
The flower dolls wilted in the sunshine
She found the white hollyhock ladies asleep

8. Little Pat's father took him to the zoo. They went to see the great tiger in its cage. It had a black and yellow coat, huge feet, and pale green eyes. Pat was afraid of it but he would not leave. All afternoon he watched the tiger walking back and forth in the cage. He talked about it all the way home. He talked about the tiger during dinner.

Pat dreamed about Santa Claus all night
All night he dreamed about the tiger
The tiger ran out of the woods at him
Pat took the little tiger to bed with him

9. It was the evening of the Fourth of July. The children on the big farm were excited for they had lanterns to hang up. Their uncle had brought them a dozen lovely paper lanterns of all colors. The children lit them and hung them under the trees. They ran from tree to tree all evening to see that nothing hurt the pretty lanterns. Suddenly drops of rain began to fall.

The uncle brought new lanterns next year
The children took down the lanterns
They were pleased to see the rain
They made paper lanterns for their dolls

10. A man was crossing a desert in a car. He saw hundreds of Indians in a big circle and heard them singing. He went to see what was inside the circle. He saw painted Indians dancing with empty bowls in their hands. They were praying for rain. A big Indian said to the man, "You go away quick!" The Indian looked very angry.

The Indian crossed the desert
The Indians got into canoes and went away
The man took a drink of rain water
The man got into his car and left

11. A dog named Nettie had five beautiful pups which grew into big dogs. When winter came these five slept in the barn in the straw. But Nettie always slept beside the house even when it snowed. She loved the people in the house more than a warm bed. The people had to move from the farm to a town. They decided to take only the best dog.

They mended and painted the barn
The five beautiful pups were put in the car
They took Nettie, the best dog, with them
They dug wide paths in the snow

12. Jane looked at the big red rooster. What a fine horse he would be for her doll! She ran after the rooster and caught him. Then she tied her pretty little doll to his red back. The rooster was so frightened he acted as though he had gone mad. He rushed out of the yard and into the rocks and bushes. The doll was knocked off.

Jane put the chocolate rooster in her pocket
The little doll was broken
The rooster hopped off the roost
The doll sat in the store window

13. An American boy was in Mexico with his father. He saw Mexican men playing games with large seeds that moved. His father told him they were "jumping beans" that grew on bushes. The boy wanted some. One day he saw many little things moving about under a bush. They were jumping beans. Dozens of them rolled about at his feet.

He thought how good ice cream would taste
He filled his pockets with the beans
He told stories to the Mexican children
He bought one of the large Mexican hats

14. In some places there are wild horses. Once when one of them was caught his legs were hurt. He let himself be led into a field. For many days he stayed in one place. People said he was stupid. But one day he walked about the field and found that his legs were well. Then he jumped wildly. He made a great leap over the fence.

He ate the sugar that was given to him
He stood waiting for a saddle
He ran away so fast he could not be caught
He ate all the grass in the field

15. Once two small girls wanted to run away. They put their toys in a pink laundry bag and went out of the house. They climbed a mountain until they found a little cave. Here they made a playhouse with their toys. There were dishes for the table but they were all empty. The girls became very hungry. They put their toys in the pink bag again.

They went home
They bought new toys
They played house
They ate cherry pie

16. A snail who lived alone grew weary of his house and left it. He set out to explore the world. A robin spied him and thought he was a worm. The snail knew he was in danger so he cried, "I have a large family at home. Come with me and you shall eat us all." The robin was a greedy bird and went with the snail to his house.

The snail brought his family out to the robin
The snail asked the robin to stay in his house
The robin was sorry he had eaten the snail
The snail ran into his house and was safe

17. Pedro was a Mexican boy who lived in a mud house. The mud house had a bright blue door. The door was Pedro's one pride. There was nothing else in his home to be proud of, for his parents were very poor. One windy night he dreamed that robbers tore the blue door off its hinges and took it away. Pedro woke up crying.

He made a new door for the mud house
He ran to see if the blue door was safe
He hit the robber with a silver dish
He helped his parents build a beautiful home

18. A lark, tired of his dull feathers, wished to look like a parrot. He colored his feathers with berry juice until he was as bright as a parrot. People seeing him thought he was a parrot and wanted to cage him. All day and night they tried to catch him. The poor lark had no rest until he thought of flying into a pool. He washed off the colors.

They put the red and green lark in a cage
The lark and the parrot were drowned
The people saw he was only a lark
They sold the parrot to a circus

19. A mouse wished he had a bushy tail like a squirrel. A gray hen, feeling sorry for him, gave him some feathers. The mouse glued these on his bare tail and went away happy. He sat in a tree and curled his tail over his back. A man with a gun came by. He cried out, "One more squirrel skin and my wife will have enough for her coat!"

The mouse pulled the feathers off his tail
The mouse was glad he looked like a squirrel
The frightened hen flew down from the tree
The mouse waved his tail like a squirrel

20. A little girl built a small house of stones and mud. She made the roof of sticks covered with round pebbles. For a carpet she used dry moss. Then she went away for the summer. When she came back she saw a nest inside the house. What had lived in her house? She hid behind a tree and waited. A big striped chipmunk ran up to the door.

The little girl opened the chipmunk's cage
The chipmunk went into the house
The squirrel ran to the top branch
She knew that a robin had lived in her house

21. Betty took her pail and shovel and ran down to where the waves washed in. The water kept coming closer and closer. She dug awhile in the sand. Soon a playmate joined her. She jumped up and shook the sand off. "You dig a hole there," said she to her new playmate, "and I'll dig one here. Then we'll see what happens." They dug the holes.

They painted their new doll house
The waves filled the holes with water
They picked the flowers they had planted
They tried on their new dresses

22. A fairy took off her rose-petal dress and went swimming. A caterpillar came by, saw the dress and ate it up. Then he took off his coat and went to sleep. Out of the pool came the fairy. No dress could she find. She stole the caterpillar's furry coat and put it on. The caterpillar woke up shivering. In anger he dug himself a hole.

The caterpillar put on his coat
The fairy put on the rose-petal dress
The caterpillar crawled into the warm hole
The caterpillar buttoned up his coat

23. Don had built a bridge across the brook. It was made of twigs and long straws. Of course it was so weak that even a hoptoad could have broken it down. Fizz, the kitten, wanted to cross the brook but she hated to wet her feet. She stepped on the bridge. Down went Fizz, twigs, and straws. Don was close by when Fizz took her foolish step.

Fizz curled up on her pillow and slept
Don built another bridge of the same straws
Fizz pulled the straws out of her fur
Don pulled frightened Fizz out of the brook

24. Sniffy, the cat, had had a home. When the people moved away he was left homeless. He slunk about the streets eating what he could find or nothing. He grew both thin and dirty. One day a boy, whose pet cat had just died, saw Sniffy. The boy was lonely. He wanted to make some poor cat happy. The boy saw that Sniffy was unhappy.

The boy threw sticks at Sniffy
The boy took Sniffy home with him
Sniffy died of hunger in a few days
Sniffy was a poor street cat all his life

GATES SILENT READING TEST

Type C. Reading to Understand Precise Directions

Grades 3–8 FORM 2

Write your name here.....

How old are you?.....When is your birthday?.....

School.....Grade.....Date.....

This is to be a reading test. You are to read a number of paragraphs. Each paragraph tells you to make some sort of mark with your pencil to show that you have understood the paragraph. Do exactly what the paragraph tells you to do. Make the marks quickly—do not waste any time trying to make pretty drawings. The purpose of the test is to see how many of the paragraphs you can read in a short time. Don't waste any time. Don't look at anyone else's paper. Remember, you must do exactly what the paragraph tells you to do. Don't make any marks other than those the paragraph tells you to make. Wait until you are told to "Begin," then turn the page and work as quickly and accurately as you can until you are told to "Stop!"

Do Not Turn the Page Until You Are Told to Begin

To the examiner. 1. See that each child has a pencil. If colored pencils are used the tests will be much easier to score. 2. Distribute the papers. 3. Have children fill in the blanks on this page. 4. Read the directions aloud. Hold up one of the inner pages to show the test paragraphs. Tell the children they are to read, in order, as many paragraphs as they can in eight minutes. (Demonstrate the order on all three pages.) 5. This page should be face up when the signal "Begin" is given. The pupils then turn the page and begin. 6 Say **"Stop" at exactly the end of eight minutes.** Be very careful to allow exactly eight minutes' time. 7. Collect the papers immediately. 8. See Manual of Directions for methods of scoring and norms.

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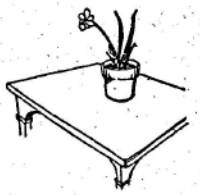
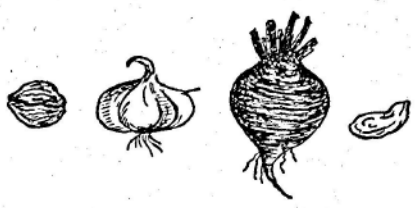
Teachers College, Columbia University
NEW YORK CITY

1. Ruth has three dolls. One is a negro doll, one is a baby doll, and one is the doll her mother had when she was a little girl. Ruth loves the old-time doll best of all because it was her mother's. Draw a line under the doll that Ruth loves best.

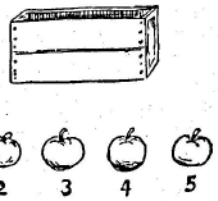


2. Mary gave her mother a pretty flower for her birthday. Here it is on the table. The flower has been in bloom several days. The petals are ready to fall. They will fall on the table just below the bloom. Draw a circle where the petals will fall.

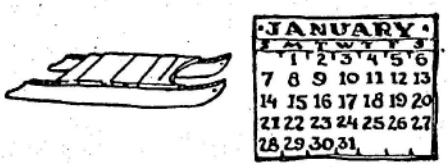
3. It is now half past twelve. Rose must take her music lesson at three. Draw a line around the number that will tell Rose when it is time for her to go to her music lesson. When this is done she will know when it is time for her to leave.



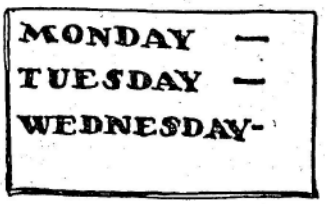
4. Some things grow in the ground and some things grow on trees. Here is a walnut, an onion, a beet, and a peanut. The onion, the beet, the peanut, grow in the ground and the walnut grows on a tree. Draw lines under the ones that grow in the ground.



5. A box of apples has been sent to Jack. These five apples have just been taken from the box. The second apple is bruised so badly that it cannot be eaten. Draw a line through it to show that it is no good, so that no one will want to eat it.



6. It is now January 20. About a week ago William's father gave him a sled for his birthday. His birthday came on January 12. Draw a line around the day on the calendar which was his birthday so we will know when the sled was given to him.

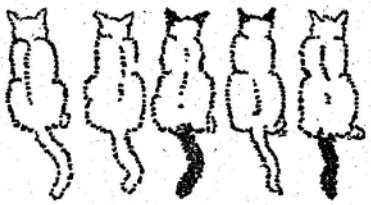


7. William wants to keep his score in Arithmetic for Monday, Tuesday and Wednesday. The first day he worked eight examples, the second day nine, and Wednesday ten. Put the score by the day on which he did best, so William will know how well he has done.

8. Many trappers live in the cold north. They hunt wild animals for their fur. A trapper lives in this tiny hut and these are his dogs. They made a long trail as they came through the snow from the hut. Draw a line showing the trail the trapper's dogs made.

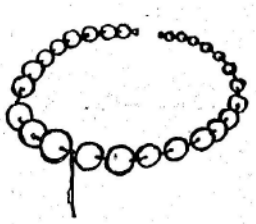
1 2 3

9. Here are three kinds of stamps. The first was once used on post cards. The second is for letters. The third kind is for letters that are to be sent very quickly. Draw a line under the stamp you would use on a letter that does not have to go quickly.



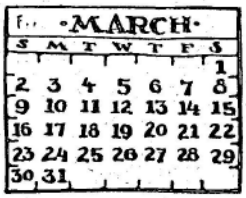
10. Here are five little kittens in a row. Two of them are pure white. The third one has black ears and a black tail. The next one has black ears only. The last one has a black tail only. Make a cross on a kitten that does not have black ears.

11. Sewing machines can sew with one thread or two threads. If a machine uses two threads as in the upper picture, we call it lock stitch. If it uses one thread as in the lower picture, we call it chain stitch. Place the number 2 by the stitches made with two threads.

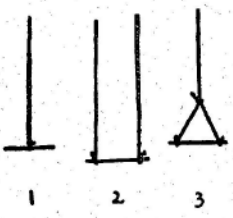


12. Ruth is stringing beads for a necklace. All the beads are different colors. She has not yet finished the necklace. She wants to put a large red bead on the end of the string that is hanging down. Draw the bead for Ruth where it should be.

13. Walter had these three pieces of money. He wanted to buy a valentine for the school valentine box. He found valentines for fifty cents, ten cents, and twenty-five cents, but no one was to pay more than ten cents. Draw a line under what Walter paid for the valentine.

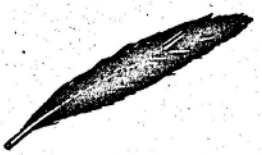


14. There is going to be a clean-up day in the town where Dave lives. It is to be a holiday and every child will help make the town clean and pretty. Monday, the tenth of March, will be the day. Draw a cross on the day that will be a holiday.

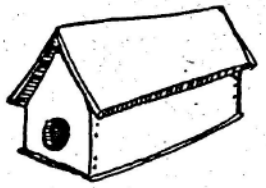


15. Here are three kinds of swings you can make with rope. Dave likes the first one because he says it is like the one he saw at the circus. He thinks he can go highest on it, too. Most children like the second. Make a cross under the one Dave likes best.

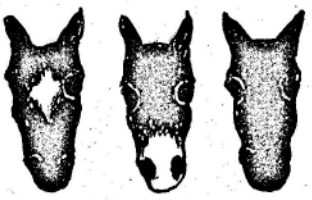
16. The little Eskimo child does many things different from things you do. He lives in a house made of snow, and wears mostly fur clothes. He sleeps in fur bags while you sleep in nice beds. Both keep children warm. Draw a line under what the Eskimo child sleeps in.



17. This is a large feather from a bird. It is very pretty and Mary's mother wants to use it as a pen. A pen point will have to be placed on the left end. Make a cross where it should be placed so Mary's mother can have it put on.



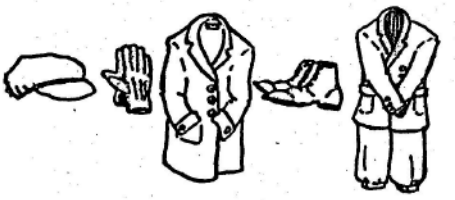
18. William has made a bird house so that some bird will build its nest in it. He wants to place some food in front of the round opening so that the birds will come. Will you make a cross there so that this bird will come to the house now?



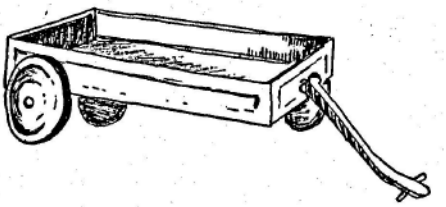
19. John loves his pet pony. He rides it everywhere. He says he likes his pony because it has a white nose. The pony likes John, too, and likes to take him on his back. Draw a cross over the picture of John's pony, so he can find him quickly.

20. James's uncle gave him a dozen beautiful marbles. James played with them for a few hours. Then he thought of his friend Tom who was sick. He took him four of the marbles and Tom was very happy. Draw a line around the number of marbles James gave Tom.

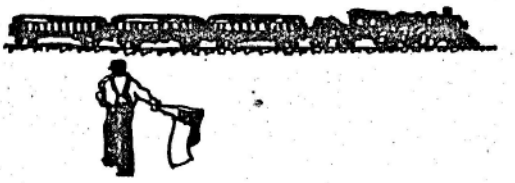
21. This little girl is going to see a friend. She has to cross this stream of water. It is not very wide but she needs something to step on as she crosses. One stone would be enough. Place a circle where it should be placed. Now she can go to see her friend.



22. It was getting very cold. Ben needed some warm clothes. His father wrote down the names of the ones above. His mother said that he did not need suit or gloves because he had those. Draw lines under the clothes that Ben needed and that his father went to buy.



23. This is a coaster cart. The children place the cart at the top of a hill and coast down. But it cannot be used now until the wheel is placed back on it. Make a cross where it belongs. When the wheel is put on again the children will coast down the hill.



24. Here is a train ready to start. The engineer wants to be sure his train has the right signals, a red flag on the front and a green flag on the back. Make a big cross where the red flag should be and a small cross where the green flag should be.

GATES SILENT READING TEST

Type D. Reading to Note Details

Grades 3–8 **FORM 2**

Write your name here.....

How old are you?.....When is your birthday? .....

School.....Grade.....Date.....

This is a reading test. You are to read a number of paragraphs. Below each paragraph are three questions which you must answer by drawing a line under the one word or phrase which gives the best answer. Let us try a sample before we begin the real test. First read the paragraph. Then underline one—and only one—of the four answers to each of the questions to show that you understand what the paragraph said.

> Next morning she awoke and found herself in a beautiful room. The walls were covered with silken curtains. There were two mirrors made of pure silver. The bed was made of ivory. The coverings were made of silk and velvet. By her bed lay a dress and a pair of slippers. The dress was made of silk. The slippers were covered with diamonds.
>
> Where did the girl find herself?
> barn room garden store
> What were the mirrors made of?
> silver gold pearl silk
> What were on the slippers?
> rubies pearls opals diamonds

On the following pages are more paragraphs just like this one. When the signal "Begin" is given you should turn the page, read the first paragraph and underline the best of the four answers to each question, just as you did here. When you finish the first go on with the second and so on until the signal "Stop" is given. The purpose of the test is to see how many paragraphs you can read and mark correctly in a short time. Don't waste any time. Don't look at anyone's paper.

Do Not Turn the Page Until You Are Told to Begin

To the Examiner. See that each child has a pencil. If colored pencils are used the tests are much easier to score. 2. Distribute the papers. 3. Have children fill in the blanks on this page. 4. Read the directions (above) aloud. Explain them with great care. Have the children try the test paragraph (above). Ask them which word they marked. Explain carefully why one answer is correct and the others wrong. Give special attention to those who marked the wrong answer. **See that all understand exactly what they are to do.** 5. Show the order in which the paragraphs are to be read on all three pages by holding up a copy of the tests. Tell them to read in this order. 6. This front page should be up when the signal "Begin" is given. 7. **Say "Stop" at the end of exactly eight minutes.** 8. Collect papers immediately. 9. Score according to directions given in the Manual of Directions.

BUREAU OF PUBLICATIONS
Teachers College, Columbia University
NEW YORK CITY

1. Did you ever play garden shop? A low bench can be your store. If you are in a garden you can find all kinds of things to sell. Stones will make good potatoes and the heads of daisies will look like fried eggs. Coffee can be sold by using brown seeds. Yellow poppies can be sold for butter or cheese. You can have a lot of fun with a garden shop.

What could you use for your garden store?
house roof bench horse

What would look like fried eggs?
stones daisies seeds violets

What could yellow poppies be used for?
coffee potatoes roses butter

2. Do you ever want to go to places that you see on the map? One little girl I know used to have a make-believe family. She would make believe that she was traveling with her family through different countries on the map. One day she would be traveling in China and the next day she might be in England. It was great fun for her.

One little girl had a make-believe—
toy arm family house

One day she would be traveling in—
China star sky earth

It was great—
sorrow fun trouble worry

3. The Chinese know how to make dainty and pleasing toys. Some of the smallest things they make are water flowers. You buy these in tiny boxes. They are like buttons of thin wood. When you put them in water, gay flowers spread out from their sides. These flowers are made of wood which swells when it is wet and the little flowers unfold.

You buy Chinese water flowers in tiny—
boxes gardens lakes bushes

These toy flowers are made of a—
metal wood cloth stone

These flowers unfold in—
dust heat water smoke

4. Some people think snowflakes look like white bees. Others say they are like white feathers. There are people who call snowflakes bits of cotton. Did you ever look closely at a snowflake that has just fallen on your sleeve? If you did you know that it is really like a pile of many bits of lace. Each bit of snow lace is perfect.

Some people think snowflakes look like—
frogs bees worms mice

Some people think snowflakes look like—
bird feet brushes brooms feathers

A snowflake is really like a pile of bits of—
ribbon lace string cord

5. There is no prettier pet than the baby guinea pig. He is much prettier and softer than other animals. Baby rabbits are born without fur and have their eyes closed, but the baby guinea pig has fur and teeth and looks like a soft, tiny bear. He is so tiny that he can be hidden under a cup. A guinea pig does not scratch as a kitten does.

Baby rabbits are born without—
ears eyes fur legs

A baby guinea pig looks like a tiny—
ant bear rabbit owl

A guinea pig does not—
run eat scratch sleep

6. Tilly Turtle was very unhappy. She did not like her watery home. She climbed up out of the water and sat upon a log hour after hour. There she could watch the gay butterflies that flew over her head. She watched the butterflies all day and tried to forget about her dull green house in the pond. But at night she had to go back to it.

How did Tilly Turtle feel?
gay unhappy afraid jolly

What did she watch?
frogs horseflies butterflies birds

Where did she have to go?
home log tree ground

7. You know how dandelion seeds travel. They are feathery umbrellas which the least breeze can carry. But other seeds travel in other ways. Some seeds have horns and hooks that catch in fur and clothing. Poppy seeds grow ripe in a pod shaped like a pepper shaker. When the wind sways this shaker, the poppy seeds fall out through tiny holes.

Dandelion seeds travel on a breeze like little—
hooks dishes stockings umbrellas

Some seeds catch in fur because they have—
pods hooks plants umbrellas

Poppy seeds grow ripe in pods that are like—
horns cars pepper shakers coffee-pots

8. When you think of fish you likely think of goldfish or such fish as those you eat. But there are fish that are as clear and soft as jelly. There are small white fish that are moon-shaped and almost as thin as paper. There are fish that look like dark snakes. Some fish have bright colors like parrots and some even have mouths like a parrot's.

There are fish that are as clear and soft as—
glass wood cotton jelly

There are fish that look like—
poles snakes mice sticks

Some fish, like parrots, have bright—
claws colors feathers wings

9. We used to think that a map was such a funny thing. A map of a city did not look at all like the city to us. But now we have the airplane and the moving picture machine. We can get a map of a city that looks just exactly like the city. We can see all the streets and houses and parks right on the map before us.

What did we use to think was a funny thing?
water map city house

What helps us now to get a good map?
sky chair airplane stars

What else helps us to get a good map?
moving pictures streets parks cars

10. Nogasak was a little Eskimo girl. She lived with her parents in a village near the North Pole. It was a queer-looking place. The houses were rounded mounds of snow about as tall as a man. They were close together. Each family built its house where it pleased. There were no streets, as there was no need for them in so small a village.

Where did the little Eskimo girl live?
in tropics near North Pole in Europe near South Pole

What was her house made of?
straw brick snow grass

What was queer about the village?
no snow no houses no streets no people

11. The nightingale is a bird that is called the sweetest singer of all. In America you can see one only in a zoo. Its cage may be next to that of a red and green parrot that squawks and acts like a clown. The nightingale itself is a small brown bird with a thin beak. It looks dull beside a parrot. It will not sing in its zoo cage.

What bird is called the sweetest singer?
clown-bird parrot robin nightingale

What color is a nightingale?
red green brown white

Where are nightingales in America?
woods zoo street desert

12. Have you ever walked in cool damp woods where mushrooms grow? Many mushrooms are as beautiful as any flowers. There are bright yellow ones that have small white frills on them. There are pink ones that are like huge rose petals. There are smoky ones like small lamp shades. Some mushrooms look like towers with red roofs.

Some bright yellow mushrooms have—
frills ribbons bows shoes

Some pink mushrooms are like rose—
beetles petals roots thorns

There are mushrooms that look like towers with roofs of—
blue green red yellow

13. Have you ever seen the little round balls on the oak trees? They are green in the summer. They are the nests of the little gallflies. When the little gallfly comes out his nest turns brown and falls off the tree. Children love to run and step on these little "puffballs" because they often break with a loud popping noise like a firecracker.

The round balls on the oak trees are the homes of—
caterpillars gallflies birds frogs
The gallfly's nest turns—
red green brown white
When they break they sound like a—
lion firecracker automobile bell

14. Ages and ages ago men began to live on this earth. They were savages who lived in a warm climate where they needed no clothing. They did not know how to cook food for themselves. They got their food as the animals did from the trees and bushes around them. Not until they learned to use fire could they cook meat or move to a cool climate.

What did the first people not need?
food water sleep clothing
Where did the first people get their food?
frying pan trees ice box stores
What did they need to learn how to use before they could cook?
electricity clothes fire dishes

15. There are many ways one can make a fire. Man found out these ways long before matches were made. One way is to rub two pieces of dry wood together until they become very warm. This will make enough heat to set fire to dry grass. Another way is to hit two pieces of rock together until sparks fly off and set the dry grass on fire.

What did man rub together to get enough heat to set grass afire?
clay coal grass wood
What did he hit together to make sparks?
rock wire matches grass
What kind of grass was used to start the fire?
moist green dry fresh

16. One way that people learned what happened a long time before they were born was through story-telling. The fathers and mothers of long ago told their children stories. Then these children would tell the stories to their children when they grew up. That is the way stories of people and places were learned before there was reading or writing.

How did people of long ago learn what happened before they were born?
telegraph radio stories reading
Who told stories to the children long ago?
children radio Santa Claus mothers
How was history learned long ago?
stories writing moving pictures books

17. People found out that the fingers on one hand would help them to count. They made number names as far as five. Then they would say, "five and one," and "five and two," and "five and three," and "five and four." But when they got above ten they just had to say "a great many." This was at the time when people were using stone tools.

What did people use in counting?
watch machine cards fingers
When did they just say "a great many"?
above two above five above seven above ten
What were people using at this time?
aeroplanes machines stone tools steel tools

18. The lion is called the king of beasts. He is very strong. A blow from his paw is like a blow from a big hammer. The other animals are afraid of him. He likes to put his mouth to the ground and roar because this awful sound makes the other animals so afraid that they rush away. Then he may run after them and catch them.

The lion is very—
tall weak strong slow
The lion likes to—
laugh cry sing roar
When the lion roars the other animals are—
happy afraid joyful gay

CHAPMAN-COOK SPEED OF READING TEST (GRADES IV TO VIII)

 (Alternative form) **Form B.**

Name_____ Sex_____ Grade_____ Age_____ yrs. mos.

School_____ City_____ State_____

Date_____ Mos. in Grade_____ Teacher_____

Standards of Achievement for the various levels of the various grades, (Midyear smoothed results) Levels of Achievement			Grade IV	Grade V	Grade VI	Grade VII	Grade VIII
Indeterminate ...	9+						
Highest	9	95	15.4	18.3	20.7	22.4	23.9
Very High	8	88	13.4	16.3	18.7	20.4	21.9
High	7	79	11.5	14.4	16.8	18.5	20.0
Medium High ...	6	66	9.5	12.4	14.8	16.5	18.0
MEDIAN	5	50	7.5	10.4	12.8	14.5	16.0
Medium Low	4	34	5.5	8.4	10.8	12.5	14.0
Low	3	21	3.5	6.4	8.8	10.5	12.0
Very Low.....	2	12	1.6	4.5	6.9	8.6	10.1
Lowest	1	5	0	2.5	4.9	6.6	8.1
Indeterminate ...	1–						

Score is the number right

Score of pupil

The table given shows the achievement of the various levels of each grade. Thus a pupil of Grade VII, scoring 14, is a Median pupil, while a pupil scoring 20 is a Very High pupil for that grade. By placing on each pupil's sheet a small cross at the point of achievement which he reached, a picture of the pupil's relative standing in his grade as obtained. Thus for a pupil of Grade VI, scoring 13, a cross should be placed slightly above 12.8.

Distribute the papers this side up and do not allow them to be turned to other side until signal is given.

SPEED OF READING TEST

PRELIMINARY DRILL

TEACHERS' DIRECTIONS—The material given below is used to give the pupils some preliminary exercise so that they will understand precisely what has to be done. All tests of speed demand exact and immediate understanding of the directions. You cannot be too careful to see that every pupil gets the idea of the test before the papers are turned and the timing commences.

In the second half of each of the following sentences, **one word** spoils the meaning of the paragraph. Find this word as quickly as you can, and cross it out. You must not write anything. Cross out the word that should not be there. In the first paragraph you can see that the word "thinnest" does not fit in with the meaning of the rest of the paragraph. You will therefore take your pencil and draw a line through the word. In the second paragraph, "nail" is wrong; you must, therefore, cross it out.

It was such a cold, boisterous, and wintry day that every person who was walking wore the thinnest clothes that he could find in his clothes-closet at the time.

There was a fire last night, and five houses were burned to the ground. It all happened because someone was careless, and threw a nail into the waste-paper basket.

Now cross out the one word which should not be there in the six paragraphs below. After you have done them, the teacher will go over them orally to be sure that you understand.

A. There was not a drop of ink in the house, for someone had broken the bottle we kept it in, so Mary decided to finish her letter with a pen.

B. Yesterday I went down town to buy some shoes and rubbers, but, when I got home, I found I had forgotten to go to the flower-store to get them.

C. The water had frozen, making the road as slippery as glass. It was only with the greatest difficulty that I prevented myself from fighting as I made my way home.

D. I was not in time for school, because I played marbles on the way; so the teacher sent a note to my parents, saying I had been early that morning.

E. One of the boys was extremely rude to the teacher so she made him come and stand by her desk, to show that he had been a very good boy.

F. When I am enjoying anything very much, time seems to go very quickly. I noticed this the other day, when I spent the whole afternoon reading a very uninteresting book.

TEACHERS' DIRECTIONS—Do not proceed to the test proper until you are quite certain that every pupil understands exactly what has to be done. Answer any questions that may arise, and just before commencing make one of the pupils state definitely just what is required.

This test has been constructed to make marking as easy as possible. After the test has been taken the pupils may change papers and do the marking while the teacher dictates the correct answers. Score is the number right.

On the other side of this sheet, there are thirty paragraphs like the ones you have done. When you are given the signal, and not before, turn the sheet over, and cross out in the **second** part of each paragraph, the **one** word which should not be there. Ask no questions. Do not stay too long on any one paragraph, but go on to the next. Remember you do no writing; you merely cross out the **one word** in the second part of the paragraph.

This is a test for speed and accuracy. Be sure to work as fast as you can, and yet not make mistakes.

Allow exactly two and one half minutes (2½ mins.)

J. B. LIPPINCOTT COMPANY, PUBLISHERS, PHILADELPHIA

Cross out, in the second part of each paragraph, the one word which spoils the meaning. (2½ minutes allowed.)

1. Mary was sitting on the seashore one hot day in June. She said to her mother, "If only I had brought my skates along, I could have had great fun."

2. The house was brightly lit and a merry and happy party was going on. The passers-by knew this for they could plainly hear many people weeping in the house.

3. This morning my mother asked me to find out what time it was. I therefore ran just as rapidly as I could to look at the calendar on the wall.

4. Mary is only five years old, and yet her eyes are troubling her a great deal. It seems dreadful to be compelled to use crutches at so young an age.

5. The visitors were not expected and as the pantry was empty there was nothing to do but to tell them they would have to go home without getting any money.

6. Mr. Smith gave a newsboy a quarter for a paper and left without his change. When the boy ran and told him he said he had never seen such dishonesty.

7. It was a cold day in winter and the ground was covered with deep snow. The children thought it just the day to go swimming for the sun was bright.

8. There is dust everywhere, and I must get the furniture rubbed off as soon as possible, so run down and bring me my shoes from the closet under the stairs.

9. When I spent this afternoon driving nails in order to hang pictures I had no trouble because I used the very best saw to be bought at the hardware store.

10. When he awoke, sunshine flooded his bedroom. He threw back the clothes of the bed, and stealing towards the window he looked out. "How dark it is outside," he cried.

11. Frank had been expecting a letter from his brother for several days; so as soon as he found it on the kitchen table he ate it as quickly as possible.

12. A certain doctor living in a city near here always has a very serious expression on his face. This is perhaps because in his work he meets only well people.

13. When the automobile stopped the driver got out and found the tank was empty. Had he thought of it, he could easily have stopped and emptied it at the garage.

14. Going home on Sunday Susan passed the church from which the sound of organ music was coming. She noticed that many people went in to dance, rich and poor alike.

15. It was quite dark in the nursery; the children could see nothing. But their mother, as she tip-toed down the stairs heard Mary reading softly to her little sister.

16. This band of men and women set sail for the new world where they could live in peace. There was great rejoicing when their eyes first saw their new automobile.

17. A camel caravan was moving very slowly across the desert. Everyone was tired out from the long, hot journey and afraid that the supply of gasoline would not hold out.

18. A boy was sitting reading a most interesting book. He was very much disappointed to find that he could not finish because there were a number of the nails missing.

19. Of the lessons I have at school I enjoy handwriting most. Father says he can understand this since he and mother were very good singers when they were at school.

20. I had no money to pay my fare when I got on the trolley car today. When a friend loaned me a newspaper, you can imagine how pleased I was.

21. To get the food they needed the Indians hunted in the forest and shot with their bows and arrows. For this reason every little Indian boy was taught to dance.

22. Seeing a strange man climb through the window of my neighbor's house, I ran to my telephone because I wanted to ask the doctor to come as quickly as possible.

23. Give your friends your photograph for a gift because they can buy anything else you choose. So go to the grocery soon if your gift is not to be late.

24. Mr. Jones' furnace greatly needed to be repaired. As he wanted to have a good job done he came to enquire where the best automobile repair shop could be found.

25. Her only reason for being absent from school was that she attended a party, but this was not a good enough excuse for the teacher to be willing to refuse.

26. James' fountain pen went dry when he was doing his homework for school. He was very cross because until he got some more glue he could not continue his work.

27. The boys saw coming towards them an old woman, bent with sorrow, dressed in deepest black. They thought, turning from their play to watch her pass, how happy she looked.

28. On Sunday Mr. Jones never reads anything but good books for he is a very religious man. Each Sunday I see him reading the newspaper before he starts for church.

29. Johnny came walking into the parlor with very dirty shoes after playing all day. His mother sent him to clean his teeth and told him he was a bad boy.

30. The paper hangers and cleaners are working in our house and nobody likes it. Even though the men are careful, the house is easy to keep clean at such times.

Go on to the next column.

Score is number right. 

New Stanford Reading Test

By TRUMAN L. KELLEY, GILES M. RUCH, and LEWIS M. TERMAN

TEST: FORM V

FOR GRADES 2-9

Name..... Grade..... Boy or girl.....

Age..... When is your next birthday?..... How old will you be then?.....

Name of school..... Date.....

Score	Educ. Age	School[1] Grade	Score	Educ. Age	School[1] Grade	Score	Educ. Age	School[1] Grade	Score	Educ. Age	School[1] Grade	Score	Educ. Age	School[1] Grade
120	19–2		100	15–8	9.7	80	12–6	6.7	60	10–8	4.7	40	9–3	3.4
119	18–11		99	15–6	9.5	79	12–4	6.6	59	10–7	4.6	39	9–2	3.4
118	18–8		98	15–4	9.3	78	12–3	6.4	58	10–6	4.6	38	9–1	3.3
117	18–5		97	15–2	9.2	77	12–2	6.3	57	10–6	4.5	37	9–0	3.3
116	18–2		96	15–0	9.0	76	12–0	6.2	56	10–5	4.4	36	8–11	3.2
115	17–11		95	14–10	8.9	75	11–11	6.1	55	10–4	4.4	35	8–10	3.2
114	17–8		94	14–8	8.7	74	11–10	6.0	54	10–3	4.3	34	8–9	3.1
113	17–6		93	14–6[2]	8.5	73	11–9	5.9	53	10–2	4.3	33	8–8	3.1
112	17–4		92	14–4	8.4	72	11–8	5.8	52	10–1	4.2	32	8–7	3.1
111	17–2		91	14–1	8.2	71	11–7	5.7	51	10–0	4.1	31	8–6	3.0
110	17–0		90	13–11	8.1	70	11–6	5.7	50	9–11	4.1	30	8–5	3.0
109	16–10		89	13–9	7.9	69	11–5	5.6	49	9–11	4.0	29	8–4	2.9
108	16–8		88	13–7	7.8	68	11–4	5.5	48	9–10	4.0	28	8–3	2.9
107	16–6		87	13–5	7.6	67	11–3	5.4	47	9–9	3.9	27	8–2	2.8
106	16–5		86	13–3	7.5	66	11–2	5.3	46	9–8	3.9	26	8–1	2.8
105	16–3		85	13–1	7.4	65	11–1	5.2	45	9–7	3.8	25	8–0	2.8
104	16–2		84	12–11	7.2	64	11–0	5.1	44	9–6	3.7	24	7–11	2.7
103	16–0		83	12–10	7.1	63	10–11	5.0	43	9–5	3.6	23	7–10	2.7
102	15–11	10.0	82	12–8	7.0	62	10–10	4.9	42	9–4	3.6	22	7–8	2.6
101	15–9	9.8	81	12–7	6.8	61	10–9	4.8	41	9–3	3.5	21	7–6	2.6
												20	7–5	2.6

[1] Grade defined as in the table in the Directions for Administering.
[2] Educational ages above this point are extrapolated values.

NOTE. **Turn the book over to find Test 1, which begins on the last page.**

TO THE EXAMINER. *Do not administer this test without first reading carefully the Directions for Administering.*

TEST	SCORE	EDUC. AGE	SCHOOL GRADE
Parag. Mean.			
Word Mean.			
Total Read.			

Published by World Book Company, Yonkers-on-Hudson, New York, and Chicago, Illinois

TEST 1. READING: PARAGRAPH MEANING

DIRECTIONS: Write JUST ONE WORD on each dotted line.

SAMPLE:

Dick and Tom were playing ball in the field. Dick was throwing the ball and..... was trying to catch it.

---

1 Ned was crying because his pony had died. Just then a fairy appeared and asked him why he was so sad. "Because," said Ned, "my dear little.....is dead."

2-3 Christmas brought toys for all. There was a ball for Mary and a cart for Paul. When the children found the presents, they were very happy. Paul played with his..... and Mary with her.....all day.

4-5 Helen and Kate pulled their sled through the deep snow to the top of the hill and soon were coasting swiftly down again. They did this over and over. The.....was so deep that they found it hard work to drag the .....to the top.

6-7 A gray pussy saw a lark out in the field and thought it would make a fine dinner. "Come here, pretty lark," said the....., "and I will show you the bell that hangs on my neck." But the wise lark said he did not care to see the.....and flew away quickly.

8-9 A pretty squirrel once lived in a hollow tree near the window of a farmhouse. In the room where the window was, a little girl named Nellie lay sick. Every day the..... came to the window and chattered as though to keep.....from getting lonesome.

10-11 A grizzly bear had a home in the high peaks of the mountains. Four flocks of bighorn sheep occupied the same area but there never was any trouble between the.....and the.....

12-13-14 Sarah practices on the piano every morning while Tom tries to play tennis alone. One day Tom asked Sarah to play with him and she said, "I can't, it would make me sick to play." "Playing.....won't hurt you," said.....; "it's better for you than playing the.....so much."

Go right on to the next column.

15-16 An old fairy tale tells of a little girl who was cured of telling falsehoods. A wise fairy clasped a diamond necklace about the little girl's throat. Whenever she said anything that was not true, the diamonds turned to coal until the truth was told. This so shamed the .....that she finally learned to speak only the.....

17-18 Although Bert and John were brothers, they were not at all alike. John was big and strong and he had very few friends. On the other hand,.....was small and weak but he was.....by everyone.

19-20 The Eskimos sometimes live in homes made of blocks of ice. Since ice melts rapidly when exposed to a temperature above 32 degrees, it is necessary for the Eskimos to keep the temperature of the room below..... degrees to keep the house from.....

21-22-23 All animals have some way of defending themselves from attack. The lion has sharp teeth, the rhinoceros has a hide so thick that scarcely anything can pierce it, while the deer can jump and run with great speed. If a single animal had the lion's....., the rhinoceros' thick....., and the deer's ability to....., it would be hard to conquer.

24-25-26 Dumped into Ernest's corner of the attic are a roller skate and a much-read storybook. "Ernest likes me better than he likes you," said the skate. "Why, you poor skate, how mistaken you are," said the book. At this moment they heard from outdoors, "Come on, Ernest, let's scoot." The word "scoot" set the book's leaves a-trembling and sent a thrill of joy through the iron heart of the skate. But just then it began to rain hard, "Pitter-patter, pitter-patter," on the attic roof. This sent a thrill to the heart of the....., and a shudder to the heart of the..... Soon Ernest came in and said, "Where is that old.....of mine?"

27-28 Trout cannot live in water which is warmer than that of their cold native mountain streams, and they prefer flowing water to still water. In the government fish hatcheries the baby trout are kept in special tanks in which the water is kept.....and.....

Turn the page and go right on.

29–30 Johnny was walking down the sidewalk in a very peculiar way. He was saying, "If I step on a crack, I will break my back; if I step in the middle, I will feel fit as a fiddle." His .....were not of the same length, because he was trying not to step on a .....

31–32 Leonardo da Vinci, the artist who painted "The Last Supper," also made important discoveries as a scientist. We do not often think of him as both.....and.....

33–34 In a certain village a ton of coal costs as much as a cord of wood, but it produces twice as much heat. Therefore the poor families in this village should be advised to burn .....rather than.....

35–36 Steel is made from iron and is therefore a manufactured product. Similarly brass is commonly made from copper and zinc. This explains why we never hear of..... and.....mines.

37–38 The Iroquois and many other tribes of Indians were very fond of war. However, the Papago Indians of Arizona prefer peace and quiet. The men sit lazily in the shade of their huts while the women weave baskets. It is hard to imagine the.....Indians going to war or.....hard.

39–40 Deciduous trees lose their leaves in winter, while evergreens, as their name implies, do not. Therefore, in forests composed of .....trees the ground is less shaded in winter than is the case in forests whose trees are.....

41–42 There are many kinds or breeds of cattle, each one being of some special use to man. Jersey cows are not highly desirable for meat, but produce large quantities of rich milk. Hereford cattle have just the opposite characteristics. Consequently, if one wanted to produce beef, he would choose the..... rather than the.....breed.

43–44 All things considered, water is the most important factor that determines success or failure in agriculture. Temperature is frequently a limiting factor, but.....is much oftener than temperature the .....factor.

Go right on to the next column.

45–46 "Prince," said the Sultan, "your condition can never be sufficiently deplored; no one can be more sensibly affected by your misfortune than I am. Never did anything so extraordinary befall any man! One thing only is wanting—revenge to which you are entitled; and I will omit nothing in my power to effect it." The.....expressed his gratitude and began to plan how he might secure the .....to which the Sultan thought he was entitled.

47–48 Ora and Anna Blackmore are twins. They have a sister, Helen, and two friends, Clara and Bessie. Write the names of two Blackmore girls who are not of the same age. .....and.....

49–50 When we hear of the Chinese wearing wooden shoes and eating with chopsticks, we think it very odd. A Chinaman would be just as surprised at our leather shoes and our table forks and spoons. The.....of any people appear.....to anyone not familiar with them.

51–52 A few yards away large birds were greedily feeding upon dead fish, regardless of our presence. They were buzzards, scavengers of our southern seacoasts. In spite of their being ugly and unmannered, we owe them a kind of respect, for we have learned to know they are among the best friends of dwellers in the tropic ....., disposing as they do of decaying.....which otherwise might be a menace to health.

53–54 Many gardeners plant perennial flowers in preference to annuals because the former will bloom for more than one season. Since larkspur is an annual and delphinium is a perennial, we can expect the.....will live longer than the.....

55–56 If I were writing about the rich, I should be inclined to divide them, according to their attitude toward life, into workers and parasites. The motto of the worker is, "I owe the world a life," and the motto of the..... is, "The.....owes me a living."

57–58 Man will risk as much for notoriety as for money. If this were not true, why would anyone risk his life by going over Niagara Falls in a barrel? Such a feat, even if successful, may bring the "hero" no....., but it is certain to bring him much.....

Go right on to the next page.

Number right	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Score	3	13	16	18	20	23	25	27	29	31	33	35	37	39	41	43	44	46	47	49	51	53	54	56	58	59	60	61	62	64	65	66	67	69	70	71	72	73	75	76	77

59–60–61 We have all seen iron subjected to hot fires and yet it did not burn. However, iron does "burn up" and this fact is demanding the attention of some of our greatest engineers. Iron combines very readily with oxygen to form iron oxide, known as rust. Oxidation is only a form of slow combustion. Consequently, if.....is not treated to..... oxidation it will soon.....

62–63 A nation composed of good homes is a good nation. The best homes teach their children high ideals and good habits which tend to prevent sickness, poverty, vice, or crime. A .....has few problems which would not be half cured if all.....were good ones.

64–65 One of the fundamental aims of silent reading is that of training each child to attain his highest level of achievement in speed without lowering his accuracy of comprehension. Neither..... nor ..... should be developed at the expense of the other.

66–67 A membrane which permits the passage of water through it but which does not permit substances dissolved in water to pass is called a semi-permeable membrane. One which allows dissolved substances as well as..... to pass is a .....membrane.

68–69 We like to subdue. Boys like to go stamping through the woods, breaking their way through to new paths. Before this modern age, war and hunting offered opportunities for the fighting spirit. The lives of most of us today are more..... Modern conditions make little demand on our..... tendencies.

70–71 To pant for recognition, to yearn to impress one's personality upon one's fellow-men, is the essence of ambition. The ambitious person may think that he merely thirsts to "do something" or "be somebody," but really what he craves is to figure potently in the minds of others, to be greatly loved, admired, or feared. To reap even a great success which no one .....does not satisfy the yearnings of the.....individual.

Go right on to the next column.

72–73 Among the most characteristic and amazing properties of bacteria is their ability for rapid multiplication. It has been estimated that the descendants of one bacterium under continued and favorable conditions would in three days number 281,500,000,000 and weigh about 7,000 tons. Fortunately, under ordinary conditions.....does not proceed unchecked at such a.....

74–75 "Naïve" and "unsophisticated" are frequently confused. The former suggests a type of behavior which is artless, spontaneous, and free from restraints of custom. The latter implies fully as great lack of knowledge of social usage, and, in addition, conduct which is primitive and perchance inelegant. Thus, the .....youth was the first to enter the car, and his.....little sister warmly kissed him in the presence of the king.

76–77 The production of bodily energy involves a chemical process. Animal energy is derived ultimately from food. All cell activity involves the expenditure of energy. Therefore all .....have to be.....

78 Fundamentally, education depends upon the capacity of a person to profit by past experiences. Past situations modify present and future adjustments. Education in its broadest sense means acquiring experiences that serve to.....existing inherited or acquired tendencies of behavior.

79–80 Suppose that in a certain country the law provides that a will, to be a valid legal instrument, must be signed by the testator (maker) in the joint presence of at least two witnesses who must themselves sign the document in attestation of the testator's signature. Mr. Brown having drawn up a will in the morning calls in Mr. Smith to witness his signature and in the afternoon calls in Mr. Jones. Since Mr. Jones was not present in the morning, Mr. Brown again signs the will and Mr. Jones then signs it. This will is.....because the two witnesses.....witnessed the making of Mr. Brown's signature.

End of Test 1. Look over your work.

| | | |

DIRECTIONS: Draw a line under the word that makes the sentence true, as shown in the samples.

SAMPLES:

A rose is a
box flower home month river

A roof is found on a
book person rock house word

1 New York is the name of a
city person ride river school

2 A shining thing is
dull high bright warm wide

3 Silk is for
books dresses gardens horses letters

4 Joyful means
even great happy short slow

5 Tears come usually when we
drink eat talk walk cry

6 A horn makes
pictures plans suits music tears

7 A limb is a part of a
story table tree wall window

8 To stitch is to
reward sew starve suggest tempt

9 The ocean is
fire land paper water wood

10 To lift means to
raise begin drive laugh watch

11 Cotton is used for baskets
clothes dinners notes wheels

12 An American is a
ball house person place table

13 A farmer works chiefly with
fish coal plants rocks wood

14 Beaches are found on a
barn coast cloak horse roof

15 A vessel is a
boat bow cloth forest lady

16 To pronounce is to
sail show speak stand watch

17 A couch is a kind of
bed captain offer pick wall

18 To be free is to have liberty
luxury patience religion revenge

Go right on to the next column.

19 Frightful means discreet precise
enthusiastic terrifying vigorous

20 Clever means
bright neat peculiar stern upright

21 A snake is a foreigner
gallery geography mold serpent

22 To inquire is to
appear rest ask sleep watch

23 A remark is something that is
destroyed slow held kept said

24 To despise is to
bind effect hate obey observe

25 A parson is a
minister pond porch prison robin

26 A monstrous thing is
enormous modest musical useful torn

27 An argument is a discussion
gully gymnasium penance perjury

28 Injury means
charm experience haste harm limit

29 A misunderstanding is a kind of diadem
disagreement disk magnet monastery

30 To scare is to
sympathize tackle taunt terrify loan

31 A worshiper is domestic
fearful gracious religious steady

32 To sneer is to
scoff scorch scratch scream scrub

33 To be brave is to be humble
courageous frightful honorable ignoble

34 Contentment means notion
provision rainbow satisfaction trifle

35 Unarmed means advantageous
beggarly defenseless verbal wasteful

36 A purchaser is a
flatterer buyer flirt hearer voter

37 A sawmill produces
candy brides dew wire lumber

38 Commerce means
speed station trade uncle weather

39 To grant means to
get give see step wish

Go right on to the next page.

Number right	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Score	3	13	16	19	22	25	27	29	31	33	35	37	39	41	43	44	45	47	48	49	51	52	53	55	56	57	58	60	61	62	63	64	66	67	68	69	70	71	72	73	75

40 Violence usually causes benefit
happiness harm knowledge respect

41 A literary person is a champion
driver robber founder writer

42 A cave is a
ballad dresser frontier grotto plea

43 An occupation is a kind of
bath luxury activity relative vein

44 Thou means her him me they you

45 To reveal is to
abuse disclose mess motor seek

46 Solemnity means legibility
magic neutrality seriousness untidiness

47 A ballot is used in draining
freezing grinding voting wrapping

48 Ambition means aspiration
frivolity loitering remorse slothful

49 To heed is to
escape fancy hurry notice prove

50 Lifeless means inanimate
indefinite infamous undecided untidy

51 Dignified means lonely
monstrous prominent spiritual stately

52 An opponent is an
owl antagonist officer outlaw inlet

53 Tumultuous is boisterous
hapless jocund lowly massy

54 Constancy means grudge
morsel rainfall steadfastness warfare

55 Eternally means already
always completely entirely squarely

56 Liberality means promotion
robbery reproof scandal generosity

57 A legacy is an
inheritance inscription ox ankle elf

58 A frenzy is a county
growth majority robber rage

59 To forbear means to
abstain knead ladle loan mimic

Go right on to the next column.

60 To be prompt is to be formal
frightful hospitable punctual purified

61 Capacity refers to
authority bloom climate habit volume

62 Shameful means dispassionate
immaterial naïve scandalous tractable

63 Romantic means perverse
sentimental shabby shameless spry

64 Meager means exceptional
scant suspicious trivial vertical

65 Indefinite means congenial
indebted lawless workmanship vague

66 To be elaborate is to be artless
complicated headstrong plain ignored

67 Ceaseless means boisterous
diminished discontented ended incessant

68 Unscrupulous means dishonest
vagrant voluntary willful zigzag

69 To sever is to
cut hurt jump tie twist

70 To quail is to
attack cower expand hunt retreat

71 Submissiveness means daring
cute heaviness wise meekness

72 Doleful means
molten nameless oriental vague rueful

73 An associate is an adversary
antagonist emigrant ensign ally

74 Covetous means avaricious
bountiful gaudy gray-headed harassed

75 A reprobate is one who is very ugly
cowardly wealthy wicked youthful

76 To impair is to
brand commend damage mingle scrape

77 Sluggish means cadaverous
inert loquacious spectral vertiginous

78 An insurrection is a fugitive
rebellion publication punishment hermit

79 Quiescent means inactive
angry perfect quick troublesome

80 Audacious means absurd
adverse casual daring hapless

End of Test 2. Look over your work.

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
76	77	78	79	80	82	83	84	85	87	88	89	90	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	109	110	111	112	114	115	117	118	120	122	124